MITCHELL'S COMPENDIUM

OF THE

INTERNAL IMPROVEMENTS

OF THE

UNITED STATES;

COMPRISING

GENERAL NOTICES OF ALL THE MOST IMPORTANT

Canals and Rail-Roads,

THROUGHOUT

THE SEV[illegible]S AND TERRITORIES
UNION:

TOGETHER WITH

A BRIEF NO[illegible]CE OF WORKS OF INTERNAL IMPROVEMENT IN CANADA AND NOVA SCOTIA.

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MITCHELL'S COMPENDIUM

of

Canals and Rail-Roads,

1835

has been reproduced

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We are confident that you will find this little book fascinating reading. It describes the canals and railroads, not as we think of them in the Twentieth Century, but exactly as they were in 1835. Many of the old names and statistics, listed here, have long since been forgotten. Comments of contemporaries in 1835 on the projected future of transportation facilities are also to be found throughout the book. Advertisements reproduced on the fly-leaf pages were not in the original edition, but are generally from the same period. Additional copies can be secured at $2.95 by writing the AMERICAN CANAL CENTER, at the above address. (In Maryland add 12¢ for state tax.)

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Entered, according to act of Congress, in the year 1835, by Mitchell & Hinman, in the clerk's office of the district court of the eastern district of Pennsylvania.

Pennsylvania & Ohio Transportation Line

TO AND FROM PITTSBURG.

THE Proprietors of the above Line beg leave to inform their friends and the public, that they have changed the agency from J. Bunting & Co. to the house of BOLTON & CO. in Philadelphia, and from G. Mulhollan, Jr. to the house of HANNA & POINDEXTER, in Pittsburg, and will be prepared to run their daily line of Boats and Cars on the opening of the Canals.

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ADVERTISEMENT

In no portion of the world is public attention, at the present moment, more powerfully attracted by the importance of Internal Improvements, than in the United States. Canals and rail-roads are piercing the country in every direction: projects which a few years ago would have seemed visionary and chimerical, have been carried into execution, with results outstripping the most sanguine calculations; immense expenditures of capital have been made, and investments still more enormous are contemplated throughout every part of the Union for the construction of these important works, which are destined to revolutionize the inland commercial intercourse of the civilized world. In a few years, they will extend from the St. Lawrence to the Gulf of Mexico, and from the Atlantic to the Mississippi, connecting the extremities of our widely extended republic, and binding our population by links stronger than iron, by lines extending thousands of miles, and thereby promoting our intercourse, facilitating our commerce, and strengthening our means of deference. It has been discovered, as a new demonstration of power in political economy, that works of internal improvement, if wisely executed, enrich, instead of impoverishing a country. Nothing but physical impossibilities are beyond the sober hopes of a

great and growing people, whose national wealth is accumulating, and whose physical resources are constantly developing by new discoveries of the materials necessary to bring these resources into play. If some great national calamity does not avert the onward progress of our country, perhaps but fifty years, or even a shorter period, will elapse, before wagons, drawn by animal-power, will generally have given place to canal-boats, or rail-road cars, impelled by steam; and the whole country will be chequered by canals and rail-roads, as it is by the common roads of the country; and there are doubtless persons now in existence, who may live to travel in rail-road cars from Eastport to New-Orleans, and meet, in Washington, those brought by similar conveyances from the remote regions of the far and distant West.

The following concise description of the Internal Improvements of the United States, will, it is believed, in connexion with the Map, present as clear and distinct a view of them as can be reasonably expected in a compendium of this kind. The articles treated of, are classed into States, commencing with Maine, and following the usual rotation from north to south, distinguishing those works which are finished or in progress from those merely prospective; stating, as far as correct information could be obtained, the points of commencement and termination; the course, capacity, and dimensions; number of locks, &c.; elevation of the ground passed over; cost of construction; and such other details as may be considered appropriate and interesting. Under the head of some of the Southern and Western

States, will be found notices of many proposed works, of great prospective utility, which are exciting unusual attention there, and which have not been hitherto noticed, in any similar publication.

Regarding the Internal Improvements of the Canadas, &c. as forming, in conjunction with those of the United States, connecting links in a vast system of inland navigation, we have inserted a notice of them, which will be found under their respective heads. Their own intrinsic importance, as works of art, and being but partially known here, render them at present, objects worthy of attention.

The principal object of this Compendium being, to give much practical information on the subject of the Internal Improvements of this country, as the plan and limits prescribed for the work will admit of, the history and legislative proceedings connected with them, as also the details of their construction, and the mathematical principles on which they depend, are purposely omitted; since even a moderate exposition of these points would require volumes. There will be found descriptive notices of eighty-eight Canals and one hundred Rail-Roads; besides enumerations of ten of the former, and fifty-four of the latter, works, now actually completed, in progress of construction, or contemplated, throughout the United States.

The number of objects treated of, and the great amount of detail connected with them, will render positive errors, in some cases, and perhaps, important omissions in others, unavoidable: these, in works of this kind, can never be entirely guarded against. The state-

ments relative to the works in question, though necessarily brief, are made as much in reference to their actual condition at the commencement of the present year, as information could be received; and the Publisher trusts, that those of his fellow-citizens who may have occasion to consult the work, will find it, as a book of reference, useful and convenient.

MERCHANTS AND FARMERS LINE.

On the Miami Canal.

THE freight and passage boats washington, Isaac Poineer, Master, and Clinton, and B. W. Ball, Master, owned by the Miami Canal Transportation Company. Will leave Hartweil's Basin, 4 miles north of Cincinnati, (hill road,) at half past nine o'clock on Wednesday morning for Middletown.

Advertisement published in Cincinnati "Crisis & Emporium", Nov. 26, 1827.

ABSTRACT
of
THE CANALS IN THE UNITED STATES
COMPLETED AND IN USE, JANUARY, 1835

	Length in Miles
Cumberland and Oxford, Me.,	20.50
New-Hampshire Canals,	10.08
Vermont Canals, estimated,	1.00
Middlesex, Mass.,	27.00
Pawtucket, Mass.,	1.50
Blackstone, Mass. and R.I.,	45.00
Hampshire and Hampden, Mass.,	20.00
South Hadley Canal, Mass.,	2.00
Montague Canal, Mass.,	3.00
Farmington, Ct.,	58.00
Enfield, Ct.,	5.50
New-York State Canals,	539.00
Delaware and Hudson, N.Y. and Pa.,	108.00
Chittenango, N.Y.,	1.50
Morris, N.J.,	90.00
Delaware and Raritan, N.J.,	65.00
Salem, N.J.,	4.00
Washington, N.J.,	1.00
Pennsylvania State Canals,	601.71
Union and Feeder, Pa.,	106.00
Schuylkill Navigation, Pa.,	108.00
Lehigh, Pa.,	46.75
Conestoga, Pa.,	18.00
Codorus, Pa.,	11.00
Conewago, Pa.,	2.50
West Philadelphia, Pa.,	.08
Chesapeake and Delaware, Del.,	13.62
Chesapeake and Ohio, Md.,	110.50
Port Deposit, Md.,	10.00
Great and Little Falls, Md.,	3.20
Washington City Branch, D.C.,	1.20
Dismal Swamp, Vir. and N.C.,	23.00
James and Jackson River, Vir.,	37.50
North-West, N.C.,	6.00
Weldon, N.C.,	12.00
Chub Foot and Marlow, N.C.,	1.50
Santee, S.C.,	22.00
Winyaw, S.C.,	7.50
Saluda, S.C.,	6.25
Catawba, Wateree, &c. &c., S.C.,	16.00
Savannah and Ogeechee, Geo.,	16.00
Carondolet, La.,	1.50
Lake Veret, La.,	8.00
Louisville, Ken.,	2.00
Ohio and Erie, and branches, O.,	334.00
Miami, and branch, O.,	66.00
Lancaster lateral Canal, O.,	9.00
Wabash and Erie, In.,	15.00
Total	2617.89

ABSTRACT OF THE RAIL ROADS, in the United States, finished and in use, January, 1835; those intended to be finished during the present year; and those in progress of construction, the period of whose completion is uncertain.

Names of Rail-Roads	Finished	To be finished in 1835.	In progress
Quincy Rail Road, and Branch, Mass.,	4.00		
Boston and Worcester, Mass.,	30.00	13.25	
Boston and Providence, Mass.,	16.00	26.00	
Boston and Lowell, Mass.,		25.00	
Providence and Stonington, R.I. and Ct.,			48.50
Mohawk and Hudson, N.Y.,	15.00		
Saratoga and Schenectady, N. Y.,	21.00		
Ithaca and Owego, N. Y.,	29.00		
Rochester Rail Road, N. Y.,	3.00		
Buffalo and Black Rock, N. Y.,	3.00		
Haerlem, N. Y.,	5.50	1.50	
Rensselaer and Saratoga, N. Y.,			25.00
Camden and Amboy, N. J.,	61.00		
Paterson, N. J.,	16.00		
New Jersey,	6.50	6.00	13.00
Delaware and Jobstown,			13.00
Philadelphia and Columbia, Pa.,	82.90	2.80	
Alleghenv Portage, Pa.,	36.69		
Philadelphia, Norristown, & Germantown, Pa.	7.00		14.00
Philadelphia and Trenton, Pa.,	26.25		
Mauch Chunk, and branches, Pa.,	13.50		
Room Run, Pa.,	5.25		
West Chester, Pa.,	9.00		
Central, or Danville and Pottstown, Pa.,	8.00		43.54
Mine Hill and Schuylkill Haven, Pa.,	20.00		
Mount Carbon, Pa.,	7.00		
Lyken's Valley, Pa.,	16.50		
Little Schuylkill and Tamaqua, Pa.,	21.50		
Schuylkill Valley, and branches, Pa.,	25.00		
Mill Creek, and branches, Pa.,	7.00		
Pine Grove, Pa.,	4.00		
Lackawaxen, or Carbondale, Pa.,	16.33		
New Castle and Frenchtown, Pa.,	16.50		
Baltimore and Ohio, and Branch, Md.,	84.00		245.00
Baltimore and Susquehanna, Md. and Pa.,	7.00	19.00	50.00
Petersburg, Roanoke, and Branch, via N. C.,	71.38		
Manchester, or Chesterfield,	13.50		
Portsmouth and Roanoke,	26.00		51.00
Winchester and Potomac,		30.00	
Potomac and Richmond,			75.00
Richmond and Petersburg,			21.50
Cape Fear and Yadkin,			89.00
South Carolina,	135.25		
Brunswick,			12.00
Tuscombia, Courtland, and Decatur,	45.40		
Lake Pontchartrain,	4.50		
Lexington and Ohio,	29.00		61.00
Miles	948.45	123.55	752.54

INTERNAL IMPROVEMENTS

OF

THE UNITED STATES.

MAINE

CANALS.

Cumberland and Oxford Canal.—This canal is the only work of internal improvement of any importance in the state. It extends from Portland to Sebago Pond, has 26 locks, and is in length 20½ miles. By means of a lock constructed in Songo River, Brandy and Long Ponds are united with it. The whole extent of water communication, natural and artificial, is about 50 miles. It was completed in 1829, and cost $250,000. The canal is connected with the Canal Bank, which is interested in it to the amount of $150,000.

The construction of a rail-road from Portland to Quebec is agitated in this state—distance from 260 to 280 miles.

NEW-HAMPSHIRE.

The *internal improvements* in this state, are a series of short canals, constructed on the Merrimack River, for the improvement of its navigation; by means of which, and the Middlesex Canal, Boston is connected with the interior of New-Hampshire.

Bow Canal, three-quarters of a mile in length, affords a boat navigation round the falls at Bow; the fall is 25

feet, with 4 locks: it was completed in 1812, and cost $25,000. *Hooksett Canal* passes Hooksett Falls, by 3 locks, with a fall of 16 feet: its length is about 50 rods, and it cost $17,000. *Amoskeag Canal* is a mile in length: the fall is 45 feet, with 9 locks, and it cost $50,000. The *Union Canal* passes 7 falls in the river, and has 7 locks in 9 miles: it cost $50,000. In the year 1811, a company was incorporated, (the charter of which has since been renewed,) for the purpose of forming a canal from Lake Winnipiseogee to Cocheco River. Near Dover, the waters of the lake being elevated above the river 452 feet, it is estimated to require 53 locks to overcome the fall: the length to be about 27 miles, and the work to cost $300,000.

VERMONT.

THERE have been several short canals constructed in this state, on the western bank of the Connecticut River; intended, principally, for improving the navigation of that river. The *White River Canal* is a small work around a fall in the Connecticut, affording a passage for flat-bottomed boats, and rafts. The *Waterqueechy Canal*, in Hartland, is another work of a similar nature. The *Bellows Falls Canal*, in Rockingham, is the most important, being about half a mile in length, with nine locks, overcoming a fall of about 50 feet. It is cut through a bed of hard granite; and affords a safe passage for small steam-boats, rafts, and flat-bottomed boats.

For an account of the *Whitehall and Rutland Rail-Road*, and *Troy Turnpike and Rail-Road*, see *New York*.

MASSACHUSETTS.

CANALS.

The *Middlesex Canal* connects the Merrimack River [illegible] It extends from Charlestown, [illegible]

posite Boston, to Chelmsford,—27 miles. The company was incorporated in 1789, and the canal was completed in 1808. Breadth at the surface, 30 feet; at bottom, 20; depth of water, 3 feet; lockage, 136 feet; with 20 locks, and 5 aqueducts. Summit-level, 104 feet above tide-water; and 32 above the Merrimack. This work, in connexion with those in New Hampshire, opens a water communication between Boston and the interior parts of that state. Cost $528,000.

Pawtucket Canal, in the town of Lowell, is 1½ miles in length, 90 feet wide, and 4 feet deep; overcoming a fall of 32 feet. It was originally constructed in 1797, but has been since widened and deepened; and is now a very important work, affording an extensive water-power to numerous manufactories.

Blackstone Canal.—This work commences at Worcester, Massachusetts, and extends to Providence, R. I. It has 48 locks, each 80 feet long by 10 wide: breadth at the surface, 34 feet; at the bottom, 18 feet; depth of water, 4 feet. The cost of this canal was about $600,000. It was completed in 1828. The summit-level at Worcester is 451.61 feet above tide-water at Providence. Forty-five miles in length.

The *Hampshire and Hampden Canal* unites with the Farmington Canal at Southwick, and extends thence to Northampton—20 miles: rise and fall, 298 feet. This work, with the Farmington Canal, connects the Connecticut River with New Haven harbour. Entire distance, 78 miles.

South Hadley Canal was constructed for passing a fall of 50 feet, in Connecticut River. It is 2 miles in length, with 5 locks. About one-third of the length of the canal is cut through a solid rock, 10 feet deep; and near the locks, more than 40 feet deep, for 300 feet in length. It was the earliest work of the kind in the United States, being commenced in 1792.

Montague Canal, on the east bank of the Connecticut River, was constructed for passing a fall of 60 feet in the river. It is 3 miles long, 25 feet wide, and 3 feet deep; with 8 locks.

RAIL ROADS.

Quincy Rail-Road.—This work was constructed for transporting granite from the quarry at Quincy, to the tide-waters of Neponset River. Including branches, it is 4 miles in length, single track, of stone and iron: an inclined plane of 375 feet in length, serves to convey the stone down an elevation of 85 feet to the road, at the foot of the quarry. It is the first work of the kind finished in the United States, being completed in 1827.

Boston and Worcester Rail-Road.—This road is to extend to Worcester, 43¼ miles: estimated to cost about $900,000, and to be completed in 1835: it is now (Jan. 1835) finished and in use as far as Westborough about 30 miles from Boston. It is proposed to continue the road to the Connecticut River; thence, through Berkshire county into the state of New-York, to connect with the New-York and Albany Rail-Road at Greenbush, opposite to Albany: the whole distance about 200 miles.

Boston and Providence Rail-Road.—This work extends in nearly a straight line, from Boston to Providence, R. I., 42 miles. The company was incorporated in 1831, with a capital of $1,000,000. Probably, the road will be finished in 1835. In use to Canton 16 miles. The immense amount of passengers and merchandise constantly passing and repassing between Boston and the south, will render this work one of the most important of the kind in the Union. The Stonington and Providence Rail-Road, a work now also in progress, will connect with this, making the distance from Boston to Stonington 90½ miles. (See Rhode Island.)

Boston and Lowell Rail-Road.—From Boston to Lowell, 25 miles. The company was incorporated in 1830, and operations commenced Nov. 28, 1831. This work is carried across Charles River by a wooden viaduct, and terminates at the canal basin in Lowell, from which there are to be branches along the several canals to the factories. Near its northern termination, it passes through a ledge of rock about 900 feet long and 40 feet high. The cut is 60 feet wide at the top, and 30 feet at the bottom. Since the commencement of the undertaking,

until the close of the year 1834, the expenditure has been $1,105,664 28. It is expected the road will be opened with a single track through its whole extent, on or about the 1st of June, 1835.

This is considered as the commencement of a series of rail-roads, to be carried through the States of New-Hampshire and Vermont, to a point on Lake Champlain, opposite to, or near, Plattsburg; thence, across the State of New-York, to Ogdensburgh, on the St. Lawrence River: the entire distance, about 335 miles.

The accomplishment of this line of rail-roads will afford to the city of Boston, and the country through which the road passes, as great and important advantages as any other enterprise of the kind in the United States.

Boston and Taunton Rail-Road, to extend from Boston to Taunton; distance 32 miles. The company was incorporated in 1831, with a capital of $1,000,000. It is proposed to unite this work with the Boston and Providence Rail-Road, at Sharon, 18 miles from Boston.

Worcester and Norwich Rail-Road.—A charter was granted for this work in 1832, and a survey made by which it was ascertained to be a highly favourable route. The distance from Worcester to Norwich, is about 60 miles. The charter granted by the legislature of Connecticut allows a bank to be connected with it, on condition of subscribing for a part of the stock. Operations on the road will probably be commenced in a short time.

A Rail-Road from Boston to Salem is contemplated, to be eventually continued to the north line of the State; and another from Lowell to Brattleborough, Vt.

RHODE ISLAND.

CANALS.

(See Blackstone Canal in Massachusetts.)

RAIL-ROADS.

Stonington and Providence Rail-Road.—This work is to commence at Stonington, Ct. to which place there is an

uninterupted steam-boat navigation from New-York, and extend to Providence, where it will connect with the Boston and Providence Rail-Road, and thereby form a direct communication between New-York and Boston during the whole year. The country between the points of commencement and termination is favourable for a work of that kind, the average elevation being about 12 feet per mile. The road is to be graded for a double track, but for the present a single one only is to be laid down. Total cost estimated at $1,139,413 39: operations were commenced in 1833, and the work is now progressing—47.5 miles in length.

A company has been incorporated to construct a rail-road from Providence to Norwich, Ct.; distance about 43 miles.

CONNECTICUT.

CANALS.

Farmington Canal.—This work commences at New Haven, and passes through the State of Connecticut, 58 miles, to the northern boundary of the State, where it connects with the Hampshire and Hampden Canal, 20 miles in length, terminating at Northampton, on the Connecticut River: whole distance, 78 miles. Fifty-six miles of this canal are completed. It is 36 feet wide, at the surface of the water; 20 feet at the bottom; and 4 feet in depth: lockage, 218 feet. The locks are 80 feet in the clear, and 12 feet wide. At its commencement, at New Haven, is a basin of 20 acres. Commenced in 1825, and finished in 1831, at a cost of $600,000.

Enfield Canal.—This canal is constructed around Enfield Falls, on Connecticut River. It commences about 11 miles above Hartford, and is 5½ miles in length, with 4 locks, each 90 by 20 feet, overcoming a fall of 30 feet. Besides the advantages derived from this work, in the improvement of the navigation of the river, it furnishes a large amount of water-power, which is yet but partially improved.

RAIL ROAD.

A rail-road has been projected from New Haven to Hartford, and a company formed for the purpose of carrying it on.

(See *Worcester and Norwich Rail-Road*, Massachusetts; and *Stonington and Providence Rail-Road*, Rhode Island.)

NEW-YORK.

CANALS.

Erie Canal.— This splendid work is the first and most important in the state; and ranks among the greatest of the kind in the world. The success attending its completion and use, fully convinced the people of the United States of the utility and advantages of artificial navigation. This canal extends from Albany, on Hudson river, to Buffalo, on Lake Erie. Commenced July 4th, 1817; first navigated, from Utica to Rome, 15 miles, October 3d, 1819; tolls first received July 1st, 1820. Canal completed in 1825. Length from Hudson River to Lake Erie, 363 miles; width, at the surface of the water, 40 feet; width, at the bottom, 28 feet; depth of water, 4 feet. Number of locks, 84; rise and fall, 698 feet.

Champlain Canal extends from Whitehall, on Lake Champlain, to Albany. Commenced, October, 1817; opened for navigation, November, 1819. Length 63 miles; width and depth the same as Erie Canal. Number of locks, 21; rise and fall, 188 feet.

Oswego Canal is a branch of the Erie, extending from Salina to Oswego, connecting Lake Ontario with the Erie Canal. Length, 38 miles. One half of the distance is canal, the remainder slack-water navigation: 14 locks. Descent from Salina to Lake Ontario, 123 feet.

Cayuga and Seneca Canal, extending from Geneva, on Seneca Lake, to Montezuma, on Erie Canal, is one half canal and one half slack-water navigation. Length, 20 miles and 44 chains: 11 locks of wood. Descent

from Seneca Lake to Montezuma, 73½ feet. Canal constructed in 1828.

Chemung Canal, another work of the State, extends from the head waters of Seneca Lake to the Chemung (or Tioga) River. Length, 18 miles, with a navigable feeder of 13 miles from Painted Post, on the Chemung River to the summit-level; making, in the whole, 31 miles of canal navigation. On the canal are 53 locks of wood, 6 culverts, 3 aqueducts, 70 bridges, 1 dam, and 1 guard-lock of stone. Completed in 1832.

Crooked Lake Canal extends from Crooked Lake, near Pen Yan, to the outlet of Seneca Lake, about 8 miles. Lockage, 270 feet. Completed in 1833.

Chenango Canal extends from the Erie Canal, near Utica, in Oneida County, to Binghampton, in Broome County, on Susquehanna River. Length, 92¾ miles. Now in progress of construction, and will be finished in 1836.

Elevation from the Erie Canal to the summit-level,	706 feet.
Descent from thence to the Susquehanna River,	303 do.
Total Lockage,	1,009 do.
Estimated cost,	$1,737,703 22

Black River Canal is to extend from Rome to the High Falls on the Black River, 36 miles, with a navigable feeder of 9 miles at Broonville, and the improvement of 40 miles river navigation from the High Falls to Carthage.

Length of canal and river navigation,	76 miles.
Rise and fall from Rome to the Black River,	1,078 feet.
Estimated cost,	$602,544

SUMMARY OF CANALS COMPLETED.

	Length.	Cost.
Erie Canal,	363 miles.	$9,027,456 05
Champlain do.	63	1,179,871 95
Oswego do.	38	565,437 35
Cayuga and Seneca do.	20	236,804 74
Chemung do. and Feeder,	36	342,133 95
Crooked Lake Canal,	8	136,331 95
	528 miles.	Total cost, $11,488,035 99

Navigable feeders on Erie, Champlain, Cayuga, and Seneca Canals, 11 miles. Making a total of 539 miles Canal Navigation completed and owned by the state. Average cost per mile, $21,314.

Amount of tolls received from the Erie and Champlain Canals, for the year ending September 30th, 1834, $1,772,364 80; expenses, $736,699 88; net revenue, $1,035,664 92. The other canals, namely, Oswego, Cayuga, Seneca, Chemung, and Crooked Lake, have not been profitable. The expenditures for all of them amounted to $118,912 96, and the tolls received to $41,153 93 Balance against them, $77,759 03.

The following extract from Governor Marcy's Message, January 6th, 1835, to the Legislature of the State, specifies the works considered at present most worthy the attention of that body, and also some of the reasons which render attention to the subject necessary:

"Your deliberations on the subject of internal improvements will be regarded by the whole state with interest, and by many sections of it with intense anxiety. It is important to the general welfare that our system should be carried on progressively, in the manner best calculated to diffuse its benefits as generally and as equally as practicable. The projects for improvements of considerable magnitude which will probably be presented to your consideration at the present session, are, a rail-road from the city of New-York to Lake Erie, through the southern tier of counties; the Black River Canal; the Rochester and Olean Canal; a ship canal from the Hudson River to Lake Ontario; and another around the Niagara Falls. The line of the proposed rail-road passes through an interesting and rapidly improving section of the state, and in addition to the common advantages of such a work, one of a more general character and affecting more immediately the commercial interests of the state, is urged in its favour. It is anticipated that by this improvement an intercourse for commercial purposes, with the extensive and flourishing regions of the west, would be open earlier in the spring and continued later in the autumn, than it now is or can be by the Erie Canal.

"A law passed at the last session of the Legislature directing the Executive to appoint a competent and experienced engineer to survey a route for this rail-road. Such an appointment was made; and the survey has

been executed. I am informed by Mr. Benjamin Wright, the engineer selected for this purpose, that the map and profile required to be filed in the office of the Secretary of State, will be completed about the 15th inst. These, when executed in a manner required by law, will assist you in coming to a correct conclusion on the subject of this improvement.

"In relation to two of the projects I have mentioned, (the Black River Canal and the Rochester and Olean Canal), I will only observe, that they are improvements in which a large and enterprising portion of our constituents feel a deep interest, and which they believe to be of great public importance. The Legislature at the last session directed surveys of the routes for them to be made, and reports to be laid before you. When they are received, you will possess authentic information to guide your actions in relation to these improvements.

"The government of the Canadas is making vigorous efforts to render safe and easy the navigation of the St. Lawrence, with a view to direct the business on Lake Ontario and the region above and around it, to Montreal and Quebec. One of the principal objects of the proposed ship canal, is to countervail these efforts and draw this business to the city of New-York. The enlargement of the Erie Canal, will, to some extent, contribute to this object. It will be for you to determine, whether the additional advantages of a ship navigation are of sufficient importance to call for the construction of such a work."

CANALS CONSTRUCTED BY JOINT STOCK COMPANIES.

Delaware and Hudson Canal.—Company incorporated April 1823, for the purpose of constructing a canal and rail-road from the Hudson River to the coal mines at Carbondale, in Luzerne county, Pennsylvania, with a capital of $1,500,000, of which $500,000 is employed in banking. The canal was commenced in July 1825, and completed October 1828. It extends from the Hudson River, 90 miles above New-York, in a south-west direc-

tion, to Port Jervis on the Delaware, 59 miles, where it unites with the Lackawaxen Canal, proceeds up the left bank of the Delaware, to Lackawaxen Creek, thence to Honesdale, the termination of the canal, 49 miles. Length of the canal, 108 miles. From Honesdale, a rail-road of 16.3 miles completes the whole work. Total length of canal and rail-road, 124.3 miles. The canal is from 32 to 36 feet wide, and 4 feet deep; ascent 535, descent 80 feet; 62 locks, total lockage 615 feet. Coal is the most important article transported on this work. (For description of the *Lackawaxen Canal* and *Carbondale Rail-Road*, see *Pennsylvania.*)

Haerlem Canal.—Company incorporated April 1826. Capital $550,000. It is to extend from Hudson to East River, through Manhattan Island. Length, 3 miles; 60 feet wide, and from 6 to 7 feet. It is to be walled with stone on both sides, and to have a street on each side, 50 feet wide, its whole length, with a lock at each end to command the tide-water.

Chittenango Canal.—Company incorporated in 1818. Length, 1½ miles. Extends from Chittenango Mill to the Erie Canal, with 4 locks.

Sodus Canal.—Company incorporated in 1829. Capital, $200,000. Canal to extend from Seneca River to Great Sodus Bay, on Lake Ontario.

The following canal companies have been incorporated, which have not yet commenced operations. Haerlem River, Owasco and Erie, Auburn and Owasco, New-York and Sharon, Niagara, Jefferson County, Oswego, Greenville, Black River, Long Island, Rochester and Olean.

RAIL-ROADS, FINISHED OR IN PROGRESS.

Mohawk and Hudson Rail-Road.—Company incorporated in April 1826. Capital $600,000. It extends from Albany to Schenectady, and affords communication between the tide-water of Hudson River and the Erie Canal. Length, about 15 miles, with a double track. It was commenced in August 1830. Cost, from $600,000 to $700,000.

Saratoga and Schenectady Rail-Road.—Company incorporated April 1831. Capital, $150,000. This rail-road forms a continuation of the Mohawk and Hudson Rail-Road, from the city of Schenectady to the villages of Ballston Spa and Saratoga, and unites these places with the line of steam-navigation upon the Hudson. Length, 21 miles. Commenced in 1831; completed in 1832. Cost, $297,237.

Ithaca and Owego Rail-Road.—Company incorporated in 1828. Capital, $300,000. It extends from the village of Ithaca, at the head of Cayuga Lake, to the village of Owego, on the Susquehanna River: distance, 29 miles. Estimated cost, $299,475.74: finished and in successful operation.

Haerlem Rail-Road.—Company incorporated in April 1831. Capital, $350,000. To extend from Twenty-third street, New-York City, to Haerlem. The work is nearly completed. Cars run on it constantly to Yorkville, 5.5 miles from the city. It is proposed to unite the contemplated rail-road from New-York to Albany with this road at the termination of the Fourth Avenue.

Rensselaer and Saratoga Rail-Road.—This work commences and crosses the Hudson at Troy, and passes up on the west side of the river to Waterford, thence to Ballston Springs. Length about 25 miles,—now in progress. Company chartered in 1832. Capital, $300,000.

Catskill and Canajoharie Rail-Road.—Company incorporated in 1830. Capital, $600,000. To extend from Catskill to Canajoharie: distance, 70 miles. The capital stock has been subscribed.

Utica and Schenectady Rail-Road.—This road was chartered in 1833, with a capital of $2,000,000. It has been surveyed and located. The operations are now about commencing. The route is a very level one, and well calculated for locomotive power. Its length will be about 100 miles.

Buffalo and Black Rock Rail-Road.—This road is 3 miles in length. It is now finished and in use. Cost, about $4,500 per mile.

Rochester Rail-Road.—Company incorporated in

April 1831, for the purpose of constructing a rail-road from Rochester to the head of navigation on Genessee River, below the falls, about 3 miles, and opening a communication between the Erie Canal at Rochester, and Lake Ontario. Completed and in use, January 1, 1833.

RAIL-ROADS PROJECTED.

New-York and Erie Rail-Road.—Company incorporated April 14th, 1832. Capital, $10,000,000. To extend from the city of New-York, or from some point in its vicinity, and to continue through the southern tier of counties, through Owego in the county of Tioga, to the shore of Lake Erie, at some point between Cattaraugus Creek and the Pennsylvania line. To be commenced within four years from the date of the act of incorporation, one-fourth to be completed within 10 years, one-half within 15 years, and the whole to be completed within 20 years, under penalty of forfeiture of the charter. $1,000,000 have been subscribed towards the construction of the above work.

New-York and Albany Rail-Road.—Company incorporated April 17th, 1832. Capital, $3,000,000. This rail-road is to commence at New-York City, opposite where the Fourth Avenue terminates, and running through the counties of Westchester, Putnam, Dutchess, Columbia, and Rensselaer, to end on the Hudson, opposite Albany. Power is also granted to the company to extend the rail-road to Troy, and to construct lateral rail-roads to the eastern limits of the counties above mentioned, to connect with any that may be made hereafter from Massachusetts or Connecticut. It is to be completed within 10 years, under penalty of forfeiture of the charter.

Hudson and Delaware Rail-Road.—Incorporated April 19, 1830, for the purpose of constructing a rail-road from Newburgh, through the county of Orange, to the Delaware River. The capital stock is $500,000, with the privilege of increasing it to $1,000,000. Preliminary surveys of four different routes have been made. Distance, from 47 to 51 miles. The construc-

tion of the road has not yet commenced. It is proposed to connect this work with another, to extend to the Lackawanna coal-mines in Pennsylvania.

Brooklyn, Jamaica, and Long Island Rail-Road, will extend from Brooklyn to Greenport, about 100 miles; thence by steam-boat to Stonington, 35 miles; then, by the rail-roads now in progress, through Providence to Boston, 90½ miles: total from New-York, 225½ miles. The stock of the above has been subscribed, and operations are about commencing.

RAIL-ROAD COMPANIES INCORPORATED IN 1832.

Names.	Capital.
Lake Champlain and Ogdensburgh,	$3,000,000
Watertown and Rome,	1,000,000
Utica and Susquehanna, (from Utica to the New-York and Erie Rail-Road,	1,000,000
Black River, (from the Erie Canal at Rome or Herkimer, to the St. Lawrence,)	900,000
Ithaca and Geneva,	800,000
Buffalo and Erie,	650,000
Dutchess, (from Poughkeepsie to Connecticut line,)	600,000
Tonawanda, (from Rochester to Utica,)	500,000
Hudson and Berkshire, (from Hudson to Massachusetts line,)	350,000
Schoharie and Otsego, (from the Catskill and Canajoharie Rail-Road to the Susquehanna River,)	300,000
Danville and Rochester,	300,000
Aurora and Buffalo,	300,000
Troy Turnpike and Rail-Road, incorporated in 1831,	300,000
Fish-House and Amsterdam,	250,000
Warren County, (from Glenn's Falls to Caldwell,)	250,000
Saratoga and Fort Edward,	200,000
Otsego, (from Cooperstown to Collierville,)	200,000
Albion and Tonawanda,	200,000
Auburn and Erie Canal,	150,000
Mayville and Portland,	150,000
Great au Sable, (to Port Kent and Peru,)	150,000
Saratoga and Schuylerville,	100,000
Elmira and Williamsport,	75,000

During the session of the Legislature of 1833, the following rail-roads were incorporated, in addition to the Utica and Schenectady Rail-Road, noted above:

Names.	Capital.
Au Sable, or Port Kent and Keeseville Rail-Road, 4½ miles in length,	$60,000
Buffalo and Niagara Falls Rail-Road, 23 or 24 miles in length,	110,000
Niagara Falls and Lockport Rail-Road, 22 to 24 miles in length	110,000
Bellows Hall and Rutland Rail Road, about 21 miles in length.	150,000

Besides the foregoing proposed works, a ship-canal from the Hudson River to Lake Ontario, and a similar work around the Falls of Niagara, are strongly advocated: the first, it is estimated, will cost 10, and the latter 5 millions of dollars. See extract from the Governor's message.

NEW-JERSEY.

CANALS.

Morris Canal.—This canal was commenced in 1825, and extends from Jersey City, on Hudson River, across the State of New-Jersey to Delaware River opposite Easton, Pennsylvania, where it connects with the Lehigh Canal. It is 101.75 miles in length, from thirty to thirty-two feet wide at the surface of the water, from sixteen to eighteen at the bottom, and four deep. Rise and fall 1,657, of which 223 feet are overcome by twenty-four locks, and the remaining 1,334 feet by twenty-three inclined planes. There are, also, connected with this canal, 4 guard-locks, 5 dams, 30 culverts, 12 aqueducts, and more than 200 bridges. The water for this canal is supplied from Hopatcong Lake, situated 900 feet above tide-water. Completed, and in use to Newark. The remainder, 11.75 miles, estimated to cost $100,000. Cost near $2,000,000.

Delaware and Raritan Canal, extending from Bordentown on Delaware River to New Brunswick on the Raritan, is 42 miles in length, with 116 feet lockage, overcome by 14 locks. The locks are 110 feet in length by 24 in width: vessels of large burthen may consequently pass through this canal; and its advantages to the coasting trade of the country will be great, as, in connexion with the Chesapeake and Delaware, and Dismal Swamp Canals, it furnishes a continuous internal water communication between New-York city and Albemarle Sound. The water to supply this work is conducted by a navigable feeder 50 feet wide and 5 feet deep, extending from Bull's Island in the Delaware, to

its junction with the main canal at Trenton, 23 miles. Whole cost of the canal, feeder, &c. is estimated at about $2,000,000.

Manasquan River and Barnegat Bay Canal Company, was authorized under the act of 21st February, 1833, with a capital of $5000, to make a canal 40 feet wide, and 5 deep, from the mouth of the Manasquan River to the head-waters at Layton's pond or ditch, in Monmouth County.

A short canal of about 4 miles in length, in Upper and Lower Penn's Neck Township, Salem County, connects the Salem Creek with the Delaware River, and saves to sloops that ply in the creek from 15 to 20 miles of the distance to Philadelphia.

Washington Canal is about 1 mile in length. It cuts off a considerable bend in Manalapan Creek, and shortens the distance from Washington, Middlesex County, to the Raritan River.

RAIL-ROADS.

Camden and Amboy Rail-Road.—This is one of the most important works in the Union, being the great highway between the cities of Philadelphia and New-York. Company incorporated in 1829. This work commences at Camden, directly opposite Philadelphia, and terminates at South Amboy. The distance from Camden to Amboy, in a direct line, is 60 miles—by the rail-road, 61 miles. In its course it passes through the city of Burlington, and the towns of Bordentown, Centreville, Hightstown, Spottswood, and Herbertsville, to South Amboy. This rail-road being designed for steam locomotive engines, is to be eventually constructed in the most substantial manner; but at present wooden rails are used for some parts of the line, that the embankments may be consolidated before laying the permanent track. It is intended for a double track. Total estimated cost of the road with a double track, $1,120,322 14; [illegible] real estate, $115,792 84; $180,000 for steamboats; $11,587 65 for locomotives and cars; and $8,674 01 for wharves and piers. This Company has

obtained the exclusive privilege across the state, and has been united, in pursuance of an act of the Legislature, with the Delaware and Raritan Canal Company. A branch of the rail-road has been authorised to New Brunswick, and it is also the intention of the Company to construct one from a point on the Camden and Amboy Rail-Road to Mount Holly. Steam power is used on this road; and the distance from New-York to Philadelphia, 96 miles, is travelled in about 7 hours. The 61 miles on the rail-road are usually performed in 4 hours.

Paterson and Hudson Rail-Road Company.—Incorporated in January, 1831. Capital $250,000, with liberty to increase it to $500,000. The road extends from Paterson to Jersey City on the Hudson, opposite to New-York. Length 16 miles. Finished and in use. Total estimated cost, including the machinery for inclined planes, $294,285.

New-Jersey Rail-Road was incorporated in 1832. Capital, $750,000. This work is to extend from New Brunswick, through Rahway, Woodbridge, Elizabethtown, and Newark, to Jersey City opposite New-York. The first 2½ miles, from Jersey City to the west side of Bergen ridge, will be used in common with the Paterson Road. Nine miles of this road, viz., from Jersey City to Newark, are finished and in use, and will probably be completed to Elizabethtown, 15 miles from the Hudson River, early this year. It is to be constructed in a permanent manner; and will no doubt be found a work of great utility.

Delaware and Jobstown Rail or Macadamized Road Company, was incorporated under the act of 11th February, 1833, with a capital of $60,000, and liberty to increase it to $200,000, for the purpose of making a public road from the mouth of Craft's Creek, upon the Delaware River, by the villages of Columbus, Jobstown, and Juliustown, to New Lisbon, a distance of 13 miles. Now in progress of construction.

Elizabethtown and Somerville Rail-Road is to extend from Elizabethtown to Somerville. Company incorporated at the session of the Legislature, 1830. Capital, $200,000, with liberty to increase it to $400,000.

West-Jersey Rail-Road.—Company incorporated at the same session with the above. Capital, $500,000, with liberty to increase it to $2,000,000. To extend from the Delaware River in the county of Gloucester, or from some point on the Camden and Amboy Rail-Road, to the township of Penn's Neck, on the same river, in the county of Salem.

A Company has also been incorporated for constructing a rail-road connecting the Morris Canal with the Paterson and Hudson River Rail-Road.

Paterson and Fort Lee Rail-Road Company, incorporated by act of 8th March, 1832, has authority to employ a capital of $200,000, in making a road from the town of Paterson to Fort Lee, on the Hudson River, not further than 50 feet from high-water mark; to be commenced within one year from the 4th July, 1832, and completed within six years from that time, under penalty of forfeiture of the charter.

New-Jersey, Hudson, and Delaware Rail-Road Company, was incorporated by an act of 8th March, 1832, with a capital stock of $1,000,000, and authority to increase it to $2,000,000, to be employed in making a rail-road and public highway, commencing at any point on the Delaware River, between the New-York state line and the mouth of Paulin's Kill, and thence to the Hudson River, opposite the city of New-York; or to join any rail-road chartered or to be chartered, leading to, or terminating at, the Hudson River, opposite the city of New-York.

PENNSYLVANIA.

CANALS.

Pennsylvania State Canals and Rail-Roads.—This great system of internal improvement was undertaken at the expense of the state, and is under the control of the Legislature. The construction and management of the works are entrusted to three commissioners, appointed annually by the Governor.

STATE CANALS.

Main Division.—This division commences at Columbia, at the termination of the Columbia Rail-Road, passes up the bank of the Susquehanna to the mouth of the Juniatta River, and thence to Hollidaysburg, at the eastern base of the Allegheny Mountains. On the Susquehanna, it passes through Maystown, Bainbridge, Falmouth, and Middletown: here it intersects the Union Canal; from thence it passes through Highspiretown and Harrisburg to the mouth of the Juniatta River; pursuing mostly the north bank of that stream, it passes through the towns of Millerstown, Mexico, Mifflintown, Lewistown, Huntingdon, Alexandria, and Frankstown to its point of termination. Length 171.73 miles. Lockage 747.75 feet; 40 feet wide at top, 28 at bottom, and 4 feet deep; 18 dams, 33 aqueducts, and 111 locks: 15.83 miles of this work consist of slack-water navigation. At Hollidaysburg, the above work, by means of the Alleghany Portage Rail-Road, communicates with the

Western Division of the Pennsylvania Canal.—This commences at Johnstown, on the Conemaugh, pursues the course of that stream, and also that of the Kiskiminitas and Alleghany Rivers, and finally terminates at Pittsburg. In its course from Johnstown, it passes through the towns of Fairfield, Lockport, Blairsville, Saltzburg, Warren, Leechburg, and Freeport; thus forming, in connexion with the Columbia Rail-Road, a grand chain of communication between the eastern and western parts of the state; the distance, by the above routes, from Philadelphia to Pittsburg, being about 395 miles. The above work is 104 miles in length: lockage 471 feet, 64 locks, (exclusive of 4 on a branch canal to the Alleghany,) 10 dams, 2 tunnels, 16 aqueducts, 64 culverts, 39 waste-wiers, and 152 bridges.

The canal commissioners, in their reports to the Legislature, strongly recommend the extension of this division to the town of Beaver, so as to unite with the Beaver division. By a recent survey, the distance was ascertained to be 25.65 miles, and the estimated cost of construction, $263,821. This, with a proposed canal

from Newcastle to Akron, on the Ohio and Erie Canal, will form a continuous inland water communication between Philadelphia and New-Orleans, of 2435 miles, with the exception of the passage over the Alleghany Portage Rail-Road, of 36.69 miles in length.

The Susquehanna Division.—This portion of the Pennsylvania Canal, leaves the main division at the mouth of the Juniata, and passing up the west bank of the Susquehanna River, by the towns of Liverpool and Selin's Grove, intersects the north branch and west branch divisions at Northumberland. Length 39 miles, dimensions the same as those described above: on it are 11 locks, ascent 86 feet.

North-Branch Division—Commences at the termination of the Susquehanna division, at Northumberland, passes along the right bank of the north branch of the Susquehanna, through the towns of Danville, Bloomsburg, Berwick, &c. About two miles below Wilkesbarre, it crosses to the left side of the river, and from thence to the mouth of the Lackawannock Creek: distance 72 miles. On this work there is a pool navigation of about 18.91 miles. It is contemplated to extend it eventually to the north line of the state, where a communication will take place with the Erie Canal, by means of public works now constructing in the State of New-York: ascent on this canal 111.89 feet; 13 locks, one aqueduct.

West Branch Division—Commences at the same point as the north branch division, and is carried along the left bank of the west branch of the Susquehannah, passing by the towns of Milton, Watsonburg, Muncyboro', Williamsport, Jersey Shore, and Dunnstown, to a point opposite the mouth of Bald Eagle Creek: 66.55 miles in length. On this line are several sections of pool navigation: lockage 121 feet, 19 guard and lift locks, 8 dams, and 4 aqueducts.

Beaver Division.—This section of the canal commences at the town of Beaver on the Ohio River, at the junction of the Big Beaver River, 25.65 miles below Pittsburg, and ascends the valley of the latter river, and that of its tributary, the Shenango Creek, to its termination in Mercer County, a distance of 42.68 miles.

This work, in connexion with the feeder on French Creek, and other works now in progress, are parts of a canal intended eventually to connect the Ohio River with Lake Erie, at the borough of Erie; which, when finished, will probably be about 130 miles in length. It is further proposed to construct a canal from Newcastle, on the Beaver division, 24.75 miles above the town of Beaver, along the valley of the Mahoning River, to Akron, on the portage summit of the Ohio and Erie Canal, 85 miles in length; 8 of which are in Pennsylvania, and the residue in Ohio. Estimated cost, $764,372. This is a very important work, and is strongly advocated in both states. To Pennsylvania it is of paramount consequence. It is well known, that, for want of a connexion between the canals of the two states, a vast amount of domestic produce is carried from Ohio through the Erie Canal, to the city of New-York, and a corresponding amount of foreign merchandise received back in return, which (on the completion of the above work, and the union of the western and Beaver divisions of the State Canal) would principally be carried to the Philadelphia market, and greatly increase the return trade. The advantages in favour of the Pennsylvania route over that of New-York are great. The distance is nearly 200 miles shorter, the navigation of Lake Erie would be avoided, which is frequently dangerous, business could be commenced three or four, and sometimes five weeks earlier in the spring, and carried on three weeks later in the fall, than on the Erie Canal, and the trouble, expense, and delay of two transhipments of goods saved. The delay and inconvenience frequently experienced by the people of Pittsburg and its vicinity in consequence of the waters of the Ohio being oftentimes too low for steam-boats to ascend to that city, would be remedied by the completion of the above work, as a connexion, at all times certain, would be formed with the Ohio at Portsmouth, to which place steam-boats of a small class can always ascend, except when the navigation is impeded by ice. From New-York to Akron, Ohio,—by the Hudson to Albany, Erie Canal to Buffalo, Lake Erie to Cleveland, and Ohio and

Erie Canal to Akron, the distance is 760 miles. From Philadelphia to Akron, by the Philadelphia and Columbia Rail-Road, main division Pennsylvania Canal, Portage Rail-Road, western and Beaver divisions Pennsylvania Canal, and the work proposed above, 575 miles; and from Philadelphia, by the same route, with the exception of taking the Schuylkill Navigation and Union Canal instead of the Philadelphia and Columbia Rail-Road, 613 miles, or 38 miles further: in one case 185, and in the other 147 miles less than by the New-York route. (See *Ohio*, page 70.)

Delaware Division commences at Bristol, on the right bank of the Delaware River, 18 miles above Philadelphia; it passes from thence in nearly a direct line to Morrisville, opposite Trenton. From Morrisville it follows the east bank of the river to Easton, passing, in its course, the towns of Yardleyville, Taylorsville, Brownsburg, New-Hope, Lumberville, Smithville, and Monroe. Length, 59.75 miles, and ascent, 170 feet. This is the channel by which the coal-trade of the Lehigh reaches Philadelphia.

A canal and slack-water navigation along French Creek, from the commencement of the feeder to the junction of that creek with the Allegheny River, is in progress, 46 miles of which are finished, viz. 27.5 canal, and 18.5 slack-water navigation. This work is designed to form, with the Beaver division, a canal extending from the Ohio River to Lake Erie.

West Philadelphia Canal extends around the western abutment of the Permanent Bridge, which crosses the River Schuylkill at Philadelphia. It is between 400 and 500 feet in length, and about 6 feet deep; and is designed to admit the passage of vessels above the bridge.

A canal is likewise proposed, to commence at Fair Mount dam, and extend along the western slope of the Schuylkill River to Mill Creek, about 150 yards above Gray's Ferry. Length, 2.5 miles.

PENNSYLVANIA STATE RAIL-ROADS.

Philadelphia and Columbia Rail-Road leaves the depôt at the intersection of Vine and Broad streets,

Philadelphia, passes up the Schuylkill to the viaduct, a distance of three miles. The viaduct crosses the Schuylkill River just below Peters' Island. It is 1045 feet long, 41 wide, and 30 feet above the surface of the water. Immediately succeeding the viaduct is the Schuylkill inclined plane, the length of which is 2805 feet. The road passes from thence over an undulating country. At the distance of 21 miles from Philadelphia, the line is intersected by a branch-road to West-Chester, of 9 miles in length. Thence it passes through the towns of Downingstown, Coatsville, Lancaster, and Mount Pleasant, and enters Columbia, on the Susquehanna, by an inclined plane 1720 feet in length, and joins the main division of the Pennsylvania Canal. Length, 81.60 miles. The cost, when completed for locomotive power, including cost of engines, &c. is estimated at $3,595,809 98. At the Deep Gap Cut, at Mine Hill, 52 miles from Philadelphia, the Columbia Rail-Road attains its greatest altitude, being 555 feet above tide-water in the Delaware River; and at Columbia, its elevation above the same is 237 feet.

A branch of the above rail-road extends eastwardly, through Spring Garden and the Northern Liberties, to the River Delaware. Length, 1.3 miles.

And another branch extends southwardly, down Broad street, through the districts of Moyamensing and Southwark, to the Delaware River near the Navy Yard. Length, 2.8 miles.

Allegheny Portage Rail-Road.—This work commences at Hollidaysburg, the termination of the main division of the Pennsylvania Canal, and, crossing the Allegheny Mountain at Blair's Gap Summit, thence descends the valley of the Conemaugh to its final termination at Johnstown, where it intersects the western division of the canal, being a distance of 36.69 miles, overcoming in ascent and descent an aggregate of 2570 feet, 1398 of which are on the eastern, and 1172 on the western side of the mountain. 2007 feet of the ascent and descent are overcome by planes of various inclinations, and 563 feet by grading. On this line are also four extensive viaducts, and a tunnel 870 feet long, and 20

feet high, through the staple bend of the Conemaugh River. The road is graded 25 feet wide, for 2 sets of tracks, the greatest elevation of which above tide-water is 2491 feet. Estimated cost, $1,526,029 42.

Summary of the State Canals, &c.

Divisions.	Miles.
Main,	171.73
Western,	104.00
Susquehanna,	39.00
North Branch,	72.00
West Branch,	66.55
Beaver,	42.68
Delaware,	59.75
Canal and Slack-Water Navigation on French Creek,	46.00
Total Canals, &c.	601.71
Columbia Rail-Road,	81.60
Allegheny Portage Rail-Road,	36.69
Total Rail-Roads,	118.29
Do. Canals,	601.71
Total extent of public works,	Miles, 720.00

Of the above canals, 482 miles were opened for navigation between the 1st and 30th of March, 24 on the 25th of May, and 13 on the 4th of July; total, 519 miles. The whole amount of tolls received on all the public works for the year 1834, was $323.535 08; and it is estimated that the same for the year 1835 will amount to at least $650,000.

Governor Wolf, in his last annual message to the Legislature of the state of Pennsylvania, makes the following observations in reference to the internal improvements of the state:

"The state has now 720 miles of public improvements, which, in point of extent, execution, and prospective usefulness, may challenge a comparison with any other structure known to modern times. Of these improvements, 601.71 miles consist of canals and slack-water navigation; and 118.29 miles are rail-ways. The whole of these public works are so located as to penetrate those sections of the commonwealth which, from their known fertility and mineral wealth, gave the greatest promise

of a successful commerce with the great eastern and western emporiums of the state; and more, perhaps, than any other sections, required those facilities which would have a tendency more effectually to develop their abundant, and, in a measure, still latent, resources, and for transporting them to market, which these great state improvements were alone calculated to furnish.

"The whole cost of construction which the commonwealth will have incurred, when all her lines of improvement, now about to be completed, shall have been entirely finished, including the sum which will be required for that purpose for the current year, will amount to the sum of $22,114,915 41. This sum will doubtless sound large to such as are unacquainted with the character of the improvements, their design, extent, and great public importance; but when these are scanned and understood, and when it is known that these expensive works were constructed by the state in her own defence, to preserve her commerce from the grasp of powerful rival neighbours, and that her great chain of internal improvements has added, and will continue to add, incalculable millions to her present wealth and resources, the marvel will cease.

"The great chain of valuable public works which may now be said to be consummated, and which every friend of Pennsylvania's true interests will contemplate with an honest glow of patriotic pride and pleasure, was for a long time considered as a doubtful experiment, both in regard to its practicability and its ultimate success; and its eventual completion may well be regarded as a strong exemplification of the unlimited extent to which the achievements of a patriotic, enterprising people, actuated by a spirit of virtuous emulation, and jealous of its rights, may be carried. Had this line of intercommunication between our great commercial metropolis in the east, and the head of steam-boat navigation in the west, never been completed, this powerful state, instead of commanding, as she now does, and for ever hereafter must do, a large and valuable portion of the western trade, by which her wealth and enterprise will be immeasurably increased, would even now have her com-

mercial energies paralyzed, and be doomed to stand by, and with folded arms see not only the rich and endless commerce of the west lured by the channels of communication opened for it by her rival neighbours, to their great commercial emporiums, but even that of a large portion of her own territory would have passed out of her own limits, by the same medium of conveyance, to the same places of destination.

"The accomplishment of this portion of her great system of canals and rail-roads, has, however, placed our state so firmly on the vantage-ground, in respect to the commerce of the west, and will have so effectually secured the whole of her own, that it will be no easy task to supplant her hereafter in regard to either. And having gained this great and all important object, if it were possible that she should even be prevented from realizing a single dollar in the shape of tolls for her improvements, her true interests would nevertheless have been advanced to an extent immeasurably beyond their cost. But independently of the great advantage just mentioned, the inexhaustible stores of wealth which have hitherto lain dormant, and which her public works are destined to unlock; the increased value they will impart to every description of property throughout their whole extent; and the incalculable accumulation of tolls they will inevitably produce, will not fail to make Pennsylvania, as the God of Nature seems to have intended she should be, the first state in this great confederacy."

CANALS CONSTRUCTED BY JOINT STOCK COMPANIES.

Schuylkill Canal and Navigation Company, incorporated in 1815. The work was commenced in 1816, and the canal has now been in operation several years. Length 108 miles; breadth at the surface, 36 feet, at the bottom, 24; depth, 4 feet. Lockage, 620 feet. It extends from Philadelphia to Reading, and thence to Mount Carbon. It comprises thirty-one dams, commencing at Fair-Mount water-works, near Philadelphia, by which is produced a slack-water navigation of 45

miles; 125 locks, 80 feet long by 17 wide, of which 28 are guard-locks; 17 arched aqueducts, a tunnel of 450 feet in length, cut through and under solid rock, and 65 toll and gate-houses. The dams are from 3 to 27 feet in height. Cost, to Jan. 1st, 1830, $2,336,380.

Union Canal.—This canal was constructed in 1827. It extends from Middletown, on Susquehanna River, to a point on the Schuylkill canal, 2 miles below Reading, connecting the waters of the Susquehanna with those of the Schuylkill. Length, 82 miles, exclusive of Swatara feeder, which extends 24 miles. Its works comprehend a tunnel, 243 yards in length, 18 feet wide, and 14 high; two summit reservoirs, containing 12,000,000 cubic feet of water, the one covering 27, the other 8 acres; two steam-engines, each of 100 horse power, and 3 water-wheels for feeding the canal by pumping; 2 dams, 43 waste-wiers, 49 culverts, 135 bridges, 12 small and 2 large aqueducts, 2 guard-locks of wood, 92 cut-stone locks, and 14 miles of protection-wall of stone. Width at the surface of the water, 36 feet, at bottom, 24; depth, 4 feet. Dimensions of locks, 75 by 8½ feet. There is also connected with this canal a rail-road of about 4 miles in length, extending from the capacious basin at Pine Grove, to the coal mines. Cost of the canal and rail-road, exclusive of interest on loans, about $2,000,000.

Lackawaxen Canal.—This canal commences at the termination of the Delaware and Hudson Canal, near Carpenter's Point, and unites with a rail-road at Honesdale; 24 miles of it are in New-York, and 25 in Pennsylvania. Length 49 miles; width at the surface, 32 feet, at bottom, 20 feet; depth, 4 feet. In 1825, the Lackawaxen Company was authorized to act with the Delaware and Hudson Canal Company. Including 17 miles of Lackawaxen River, these two canals, united, form a navigation of 108 miles. Cost, $16,000 per mile. (See *New-York, Delaware, and Hudson Canal.*)

Lehigh Canal.—Company incorporated in 1818. This canal extends from Easton, on Delaware River, to Mauch Chunk. Length, including 9¾ miles of slack-water pools, 46¾ miles. Breadth, at the surface of the

water, from 60 to 65 feet, at bottom, 45 feet; depth, 5 feet. It has 43 locks, of which 2 are guard-locks, beside 5 guard-locks at the several pools. Locks, 100 feet by 52. Lockage, 360 feet. There are, also, 8 dams, varying in height from 6 feet to 16; 4 aqueducts, and 22 culverts. Cost, $1,558,000. The improvements on the Lehigh River above Mauch Chunk, are designed for a descending navigation only.

Conestoga Navigation.—Company incorporated in 1825. It extends from Safe Harbour, on Susquehanna River, at the mouth of Conestoga Creek, to Lancaster. Length, 18 miles. The navigation is effected by a series of locks and dams. Locks, 100 feet by 22. Cost, $4,000 per mile.

Conewago Canal—passing a fall of the same name on the Susquehanna River, is 2½ miles in length. Lockage, 21 feet.

Codorus Navigation—Extends from the borough of York, to the Susquehanna River. The improvement has been effected by canals and pools; it consists of 8 miles of slack-water pools, and 3 of canals. Length, 11 miles: 9 locks.

RAIL-ROADS CONSTRUCTED BY JOINT STOCK COMPANIES.

Philadelphia, Germantown, and Norristown Rail-Road.—This work extends from Philadelphia to Germantown, 7 miles, which is finished and in use. The original location of this road was based upon the necessity of passing through Germantown, thereby rendering the construction of the line liable to extremely heavy excavations and embankments, and a bridge over the Wissahiccon of more than 100 feet high. This line, by a special act of the Legislature, the company have been enabled to abandon entirely, and are constructing the road anew, branching off at about 3 miles from the city, and proceeding up the valley of the Schuylkill by easy grades and light work to Norristown, passing in its progress through Manayunk. The road from Philadel-

phia to Norristown will, when completed, be about 17 miles in length,

Philadelphia and Trenton Rail-Road.—This road extends from Philadelphia to Morrisville, opposite to Trenton, N. J., passing through or near, in its progress, the towns of Frankford, Bristol, Tullytown, &c.; and, but for the charter of the Camden and Amboy Rail-Road, which secures to that company the exclusive privilege of a Rail-Road across the state of New-Jersey, it would be continued to New-Brunswick, there to unite with the New-Jersey Rail-Road to New-York. Length, 26.25 miles, single track, finished and in use.

The *Mauch Chunk Rail-Road* was commenced in January, 1827, and completed in May following. It extends from the coal-mines, near Mauch Chunk, down an inclined plane to Lehigh River. The elevation of the mines above the river, at the point where the coal is received in boats, is 936 feet. The rail-road has a continued descent from the summit, so that the cars descend by their own gravity, and are drawn back by mules. Its length from the mines to the river is 9 miles, and that of its branches at the ends and sides 4½. The coal is transported in cars, fourteen of which are connected together, containing a ton and a half each. A single conductor rides on one of the cars, and regulates their movement. From 300 to 340 tons of coal are discharged daily at the river. Single track. Cost, $3,050 per mile.

The Room Run Rail-Road.—From Mauch Chunk, up the Lehigh River to a coal-mine. Length, 5¼ miles. Finished and in use. Belongs to the Mauch Chunk Company.

West Chester Rail-Road is a branch from the Philadelphia and Columbia Rail-Road, which it leaves about 21 miles from Philadelphia, and extends 9 miles to West Chester. Cost about $100,000. Completed and in use.

The Central Rail-Road, or *Danville and Pottsville Rail-Road*, commences 2½ miles beyond Pottsville, and extends to Sunbury, opposite the forks of the Susque-

hanna River. Length, 44.54 miles. A branch about 7 miles long extends to Danville, on the North Branch of the Susquehanna. Entire distance, 51.54 miles. This work is designed to accommodate the great coal-region on the Shamokin, Mahonoy, &c., and to connect the Susquehanna with the Schuylkill Navigation. The eastern section of this road was opened for use in September, 1834, and the residue is rapidly progressing towards completion.

Mine Hill and Schuylkill Haven Rail-Road extends from Schuylkill Haven, up the west branch of the Schuylkill River, through Mine Hill Gap, and terminates at the coal-mines in that vicinity. Finished and in use. Trade, coal. Length, including two branches, 20 miles. Cost $160,000.

Mount Carbon Rail-Road extends from Mount Carbon, one mile below Pottsville, up the valley of the Norwegian Creek. Main line and branches, about 7 miles in length. Finished and in use. Trade, coal.

Lykens' Valley Rail Road extends from Millersburg, on the Susquehanna River, up Lykens' Valley to a coal-basin on the Broad Mountain. Length, 16½ miles. Begun and completed in 1833.

Little Schuylkill Rail-Road.—From Port Clinton, at the mouth of the Little Schuylkill River, to the village of Tamaqua, on that stream, 21½ miles; with several branches to coal-mines. This work is designed principally to transport coal to the Schuylkill Navigation. Finished and in use. An extension of this road is proposed from Clinton to the borough of Reading. Length of the proposed portion, 19.75 miles. Estimated cost, $746,880.

Schuylkill Valley Rail-Road commences at Port Carbon, and terminates at Tuscarora; length, 10 miles. It has 20 lateral roads intersecting it, the united lengths of which amount to about 15 miles. The rail-road has two tracks, and the lateral roads but one. Cost of the main line, $5,500 per mile; that of the lateral roads, $2,600 per mile.

Mill Creek Rail-Road commences at Port Carbon, and extends up Mill Creek 4 miles. Single track. Cost, $14,000. About 3 miles of lateral rail-road intersect the main stem, which cost about $2,000 per mile.

Pine Grove Rail-Road extends from Pine Grove, at the termination of the Swatara feeder, to the coal-mines, 4 miles above. Cost, $30,000. This is a part of the works belonging to the Union Canal Company.

Lackawaxen or Carbondale Rail-Road commences at the termination of the Lackawaxen Canal, connecting that work, and the Hudson and Delaware Canal, with the coal-mines at Carbondale. Length, 16.3 miles. An elevation of 800 feet on the Moosic Mountain is overcome by five inclined planes, each from 2000 to 3000 feet in length. Single track. Cost, $6,500 per mile.

Oxford Rail-Road will diverge from the Philadelphia and Columbia Rail-Road, about 40 miles from Philadelphia, and, passing through Oxford, terminate at the south line of the State, where it will unite with the Baltimore and Port Deposit Rail-Road. Length about 25 miles.

Philadelphia and Reading Rail-Road is intended to commence at Norristown, the termination of the Philadelphia, Germantown, and Norristown Rail-Road, and to extend to Reading, 40.44 miles: here it will join the proposed Rail-Road to Port Clinton, at the mouth of the Little Schuylkill River. Surveys have been made, and its practicability established. Cost estimated at $947,425.

West Philadelphia Rail-Road, will extend from the Permanent Bridge to a point on the Philadelphia and Columbia Rail-Road, 2 miles west of the Gen. Wayne tavern. Three lines have been surveyed, which are in length as follows, viz.: the Northern, 8.75; Centre, 8.25; and the Southern line, 9.12 miles. The cost for double tracks of rails is estimated, for each respectively, at $215,000, $200,000, and $225,000.

DELAWARE.

CANALS.

Chesapeake and Delaware Canal.—This work, though less than 14 miles in length, was constructed at great expense—having cost about $161,000 per mile. This was owing to its size, the depth of its excavations, and the extent of its embankments: its dimensions permit the passage of coasting vessels. It presents one of the cases where canals are decidedly superior to rail-roads; namely, for connecting, by a short line, an immense extent of navigable waters. Although the tolls chargeable on every ton, render the cost of transportation greater than on a rail-road of similar extent, and constructed for perhaps one-tenth of the cost of the canal, nevertheless, the expense, delay, and inconvenience, of transhipment, give a preference to a work which permits of a continuous voyage. This canal is partly in the State of Delaware and partly in Maryland, connecting Delaware River with Chesapeake Bay. Length, 13⅝ miles; breadth at the surface, 66 feet; depth, 8 feet—being designed for sloop navigation. It leaves Delaware City, 45 miles below Philadelphia, passes across the peninsula, and communicates with Back Creek, a tributary of Elk River, which falls into Chesapeake Bay. It has two tide and two lift locks, 100 feet by 22 feet in the chamber. The summit-level is 12 feet above tide-water. Commenced in 1824; opened for navigation in 1829. Cost, $2,200,000.

RAIL-ROADS.

Newcastle and Frenchtown Rail-Road.—This very important work forms part of the great highway between the cities of Philadelphia and Baltimore. It is nearly parallel to the Chesapeake and Delaware Canal, and is in direct competition with it. It extends from Newcastle on Delaware River to Frenchtown in the State of Maryland, affording a direct communication between Delaware River and Chesapeake Bay. It consists of a

single track with the requisite number of turn-outs, and is about 16½ miles in length—only 853 yards longer than a perfectly straight line drawn between its two extremities. It consists of 6 curve and 6 straight lines. The curve lines vary in length from 1,939 to 8,296 feet. The *radii* of the three smaller curves are of 10,560 feet each; the radius of the largest, 20,000 feet. The aggregate length of the curves is 5.16 miles; that of the straight lines, 11.3 miles. The graduation of the road departs from a perfect level by ascents and descents varying from 10 feet 6 inches to 16 feet 4 inches a mile; at one place, for about 4,000 feet, the slope is at the rate of 29 feet to the mile. The whole amount of excavation is about 500,000 cubic yards of earth, exclusive of the side-drains. The amount of embankment 420,000 cubic yards. The road crosses 4 viaducts and 29 culverts, all constructed of substantial stone masonry. Width, 26 feet, exclusive of the side-drains. Completed in 1832. Cost, including land, wharf, depôts, and locomotive engines, $400,000.

Wilmington and Downingtown Rail-Road.—Company incorporated in 1831. Capital, $100,000, with liberty to increase it to $150,000. Rail-road to extend from Wilmington to the boundary line of the state, in the direction of Downingtown, Pennsylvania.

Wilmington and Susquehanna Rail-Road.—Company incorporated Jan. 18, 1832. Authorized capital, $400,000. A survey of the route has been lately made, and the construction of the road found to be practicable. It will extend from Wilmington to Semper's Point, on North-East Bay, which communicates with Chesapeake Bay, near the mouth of the Susquehanna River. Length 26¼ miles.

MARYLAND

CANALS.

Chesapeake and Ohio Canal.—Charter granted by Virginia, 1824; confirmed by Maryland and Congress, 1825. Commenced in 1828. Proposed length, 341¼ miles. To extend from tide-water of the Potomac River

above Georgetown, in the District of Columbia, and terminate near Pittsburg, Pennsylvania. Breadth at the surface of the water, from 60 to 80 feet; at the bottom, 50 feet; depth from 6 to 7 feet. The first 2 miles of this canal above Georgetown are 70 feet wide on the surface, and 7 feet deep; the next two miles are 80 feet wide, and 6 feet deep; and to the Point of Rocks, 48 miles, 60 feet wide and 6 deep. Five miles from Georgetown the canal is planned for constructing branches severally to Alexandria and to the navy-yard at Washington. The locks are of stone, 100 feet by 15. Amount of lockage required on the whole canal, 3,215 feet. At the summit-level, upon the Allegheny Mountain, a tunnel is required 4 miles and 80 yards long; with a deep cut 1,060 yards long at the western end, and another 14 yards long at the eastern end, each of which opens into a basin of 880 yards in length and 64 in width. The cost, as estimated by the United States' engineers, on the first surveys, was $22,375,427 69; and by the Company's engineers, since that time, $9,347,408 69. One million dollars was subscribed by the United States. A section of this canal, extending from Georgetown to Williamsport, 110.5 miles, is now in use: on it are, 44 locks; 119 culverts; 5 extensive aqueducts; and 5 feeders. Ascent, 353 feet. Cost, $3,650,000.

In reference to the above work, Governor Thomas, in his annual message to the Legislature of Maryland, observes: "We regret to say, that its prospects for early completion are not, at this time, so flattering as could be desired. This magnificent work has been prosecuted to completion through more than 100 miles of its course, with talents and zeal never surpassed, and in a manner to command admiration; but it has not yet reached the first great source of the immense trade destined ultimately to be borne on its bosom, the coal-mines of Allegheny, and now the available funds of the company being nearly, if not quite exhausted, this truly great work languishes for want of pecuniary means for its further prosecution; and the millions which have been already expended upon it must remain unproductive, and the inexhaustible mineral wealth which awaits its

further construction, lie dormant in the earth, unless means are devised of extending to it further pecuniary aid."

Port Deposit Canal extends from Port Deposit, on the east bank of the Susquehanna River, along a line of rapids, 10 miles in a north-west direction.

Potomac River Canals.—At the Little or Lower Falls, 3 miles above Washington, is a canal 2½ miles long. Difference of level, 37 feet and 1 inch, overcome by four locks of solid masonry. At the Great Falls, 9 miles above, is a canal 1200 yards long, lined with walls of stone. Difference of level, 76¾ feet, surmounted by 5 locks, 100 feet long, and from 10 to 14 wide.

RAIL-ROADS.

Baltimore and Ohio Rail-Road.—Company incorporated in 1827, by the legislatures of Maryland, Virginia, and Pennsylvania. The ceremony of laying the first stone was performed July 4, 1828; but active operations were not commenced till the autumn of the same year. Capital, $5,000,000. This rail-road, when completed, is to extend from Baltimore to Pittsburg, Pennsylvania, or to some other point on the Ohio River, thus affording communication between the waters of Chesapeake Bay and those of the Ohio.

The road commences at the depôt in Baltimore, passes in a south-west direction to Elkridge Landing, and thence along the valley of the Patapsco to Parr's Spring; then in nearly a westerly direction across the Monocasey to within 3½ miles of Frederick, to which place there is a branch road; thence south-west to the Point of Rocks on the left bank of the Potomac; and thence up that river to Harper's Ferry, at the mouth of the Shenandoah River. Distance from Baltimore, 80.5 miles.

A further extension of 30 miles will carry it to Williamsport, and another of 75 miles, to Cumberland, and a country abounding in rich bituminous coal. From this point to Pittsburg the distance is 140 miles, making the whole length 325.5 miles.

Upon the route selected for this rail-road there are only two summits for the distance of 180 miles. The approach to the first of these summits, at Parr Spring Ridge, is by an acclivity so gradual as not to exceed 18 feet to the mile. From the western side of this ridge, to the coal-mines near Cumberland, the route for the whole distance is adapted to steam locomotive engines. From the eastern base of the Allegheny Mountain, a series of inclined planes will be required to overcome a summit of 1200 feet; from thence the road may be constructed upon a line so nearly level to the Ohio River, as to be traversed by steam locomotive engines without difficulty.

At Harper's Ferry the Baltimore and Ohio Rail-Road unites with the Winchester Rail-Road, now considerably advanced towards completion, and will probably be finished in July next. Length about 30 miles; to Baltimore 110.5 miles. The above company propose to construct a branch of their rail-road to extend from Harper's Ferry to Chambersburg, Pa., and have ordered an examination of the intermediate country.

Baltimore and Susquehanna Rail-Road.—Commenced in 1830: to extend from Baltimore, to York, Pa. Length, 76 miles; 7 miles commencing at Baltimore, have been completed at an expense of $13,350 per mile, and is in use: several other divisions are under contract. When completed, it is supposed the cost of the rail-road will be reduced to about $11,000 per mile. This work has been for some time retarded, in consequence of the Legislature of Pennsylvania refusing to allow the company to construct a rail-road within the limits of that state. This difficulty being now removed by an act of the Legislature, the road will be carried forward to its completion without delay. A rail-road from York to Columbia, of 11 miles in length, has likewise been sanctioned by the Legislature of the State of Pennsylvania, which when finished, will unite the Baltimore and Susquehanna, and Philadelphia and Columbia Rail-Roads, forming a rail-road communication between the cities of Philadelphia and Baltimore, in this direction, of 168.60 miles.

The company is likewise authorized to construct a

lateral rail-road, commencing at the Main Stem, within 10 miles of Baltimore, through Westminster, to the head waters of Monocasey River.

Baltimore and Washington Rail-Road—is a branch of the Baltimore and Ohio Rail-Road, and undertaken by the same company. This work has been for some time in progress, and will probably be opened for use, on the 1st of July next: it leaves the Baltimore and Ohio Rail-Road, at Elk Ridge landing, and passes in a south-west direction, through Bladensburg, to Washington City. Length 37¾ miles. Estimated cost, $1,438,644.

Baltimore and Port Deposit Rail-Road.—This road is proposed to be constructed from Baltimore, through Port Deposit, to the north line of the state; to unite with the Oxford Rail-Road, forming between the cities of Baltimore and Philadelphia, a rail-road communication, of about 117 miles. A recent survey has been made of the route, which has been found sufficiently favourable to admit of its construction without difficulty, and at a moderate expense. Length, 52 miles.

A rail-road from Baltimore to Annapolis is proposed. Length, 30 miles.

DISTRICT OF COLUMBIA.

The Washington City Branch of the Chesapeake and Ohio Canal, extends from the Rock Creek basin, on the western borders of the city, along the bank of the Potomac River, to Tiber Creek, a distance of 1 mile and 373 yards. A tide-lock at the eastern extremity brings it to the level of the Potomac. Cost, $25,978 47.

The Alexandria Branch of the Chesapeake and Ohio Canal, is to extend from the termination of the Chesapeake and Ohio Canal, at Georgetown, to Alexandria. Length, 7 miles, 416 yards. Estimated cost, $372,204 55. An aqueduct is now in progress of construction at Georgetown, across the Potomac, for the transfer of the canal to the Virginia shore, of 1714 feet in length. The width of this canal varies from 18 to 60, and the depth from 5 to 6 feet. Now in progress.

VIRGINIA

CANALS.

Dismal Swamp Canal connects the Chesapeake Bay with Albemarle Sound. It passes over the Dismal Swamp from Elizabeth to Pasquotank River; length, 23 miles; rises only 16½ feet above the level of the Atlantic; it is 40 feet wide at the surface, and has a depth of 6½ feet. It receives the waters of a feeder from Lake Drummond of 4½ feet depth and 5 miles in length. This work has cost directly or indirectly about $800,000.

James and Jackson River Canal and Navigation.—James River admits vessels of 125 tons to Rockett's, the port of Richmond. At that city commence the falls or rapids, to pass which a series of short canals have been constructed. The Richmond Canal enters a basin in the western side of the city; it is 25 feet wide, and 3 deep, extends 2½ miles to where it enters the river; there are 12 locks, and the fall is 80 feet. Three miles above the first is a second short canal, with three locks, overcoming 34 feet fall. These canals and locks, with other slight improvements, open a navigation, at all seasons, of 12 inches water, to Lynchburg. The James River Company, in 1825, Dec. 10th, declared a canal navigation complete to the head of the falls, called Maiden's Adventure, Goochland County, 30½ miles above Richmond. Width of canal, 40 feet; depth of water, 3½ feet; fall overcome, 140½ feet; and cost, $623,295. There is also a canal on James River, around Irish Falls, 7 miles in length, and 96 feet lockage. Cost, $340,000. The above works may be considered as the commencement of a series of improvements for the purpose of connecting the waters of James River with those of the Great Kanawha, and when completed will afford the shortest and most direct line of communication from the Ohio River to the Atlantic. To aid in their completion, the Legislature have passed a law (January 24, 1835) authorizing, on the part of the state, a subscrip-

tion for three-fifths of the capital stock requisite for that purpose, that is, three millions of dollars, including the works already erected, (valued at one million,) and individuals and bodies politic are to take two-fifths, or two millions, the whole capital being five millions of dollars. The execution of the work is now placed beyond the shadow of a doubt, and a renovated spirit of enterprise will at once evince itself throughout a large portion of the Commonwealth. The corporation of Richmond is authorized to subscribe of the above two-fifths, $250,000, which, with $400,000 formerly subscribed, will amount to $650,000 on the part of the city authorities.

To improve the channels of the Roanoke and its confluents, companies have been formed in both North Carolina and Virginia. Sloops ascend the Roanoke to Weldon, above Halifax, and the Chowan to Winton. By a report of the Virginia Roanoke Company, Dec. 1828, it appeared that the improvements had been such as to admit steam-boat navigation to Salem, in Bottetourt County, west of the Blue Ridge, overcoming upwards of 900 feet fall in 244 miles, following the river channel. Danville navigation was also (1828) so greatly improved, as to admit, by a mixed series of locks, sluices, and side-cuts, a regular navigation into Rockingham County, N. C., at the village of Leaksville, 152 miles, following the bends of the river.

RAIL-ROADS.

The Petersburg and Roanoke Rail-Road.—This road was chartered in 1830, with a capital of $400,000. It extends from Petersburg to Blakeley, N. C., at the foot of the Roanoke Canal. Length, 59.38 miles. A branch from this road leaves the main line, about 10 miles from Blakeley, which extends to the head of the rapids of Roanoke; length, 12 miles. This is said to be one of the best constructed and best managed rail-roads in the country. The graduation of the road, and masonry of the bridges, culverts, and other parts of it, are of the most permanent kind. Locomotive engines are used to great advantage on this road. It was finished, and has

been in use since August 1833, and being in the direct line of the principal southern travelling, is a most important link of communication, and will derive great emolument from the transportation of passengers and merchandise.

Portsmouth and Roanoke Rail-Road commences at Portsmouth opposite Norfolk, and passes in its course through Suffolk. About 6 miles from Blakeley it intersects the Petersburg and Roanoke Road, and terminates at the head of the Roanoke Falls, a short distance below the Petersburg branch. It is estimated to cost $475,000. Part of this work is finished and in use, and the rest is in progress. Length, 77 miles.

Winchester and Potomac Rail-Road extends from Winchester to Harper's Ferry, about 30 miles, where it unites with the Baltimore and Ohio Rail-Road. This work was commenced in November, 1833, and will be finished in July, 1835. This is an important link in the great chain of communication now progressing towards the southern section of the Union; and measures are already in progress to continue it through the great Valley of Virginia, towards Tennessee.

Richmond, Fredericksburg, and Potomac Rail-Road.—To extend from the River Potomac, at the mouth of Potomac Creek, through Fredericksburg to Richmond: about 75 miles in length. A considerable part of the line is now under contract, and is progressing rapidly. The Legislature of Virginia has lately authorized, on the part of the state, a subscription for two-fifths of its capital stock; so that its completion is certain, so far as Legislative aid is concerned. At Richmond this work connects with the Richmond and Petersburg line now in progress, which, with the Petersburg and Roanoke Rail-Road completed, will shortly form a continued rail-road communication from the Potomac to the Roanoke River, of 155.88 miles in length.

Richmond and Petersburg Rail-Road.—To run from Richmond nearly due south to Petersburg, 21.5 miles. Now in progress, and nearly completed.

Manchester or Chesterfield Rail-Road extends from

Manchester opposite to Richmond, nearly a due west course, to the coal-pits. Commenced in January, 1830, and opened for use, July 1st, 1831. Cost $8000 per mile. Length, 13.5 miles.

The following rail-roads are also proposed: from Fredericksburg to Guyandot on the Ohio River; from Richmond to Lynchburg; from Lynchburg to Knoxville, Tennessee; and from Lynchburg to New River.

NORTH-CAROLINA.

CANALS.

Dismal Swamp Canal. (See *Virginia.*)

The North-west Canal connects North-west River, which empties into Currituck sound, with the Dismal Swamp Canal. Length, 6 miles; width, 24 feet; depth of water, 4 feet.

Weldon Canal, constructed by the Roanoke Navigation Company, extends around the falls of the Roanoke, near Weldon, in Halifax County. By this canal a communication is established with the valleys of the rivers Dan and Staunton. Length, 12 miles, in which distance the river falls 100 feet.

Chubfoot and Harlow Canal opens a communication for small craft, between Newbern and Beaufort. The average depth of water is 4 feet; 1.5 miles in length.

Other canal companies, viz. the Cape Fear, the Yadkin, the Tar River, the New River, and the Catawba, have done much to improve the inland navigation of the State.

RAIL-ROADS.

Cape Fear and Yadkin Rail-Road.—Company incorporated in 1832. Capital, $2,000,000, to be divided into shares of $100 each. This rail-road is to commence at Wilmington and extend to the Yadkin River, by the way of Fayetteville; thence by the way of Salisbury to Beatty's Ford, or to such other point of junction

on the Catawaba River, as may be found practicable. Distance from 230 to 250 miles. The work must be commenced within three years, and completed within thirteen, under penalty of forfeiture of the charter. The state has reserved to itself the right of connecting with this, other rail-roads leading to any other parts of the state. That section of the road extending from Wilmington to Fayetteville, was commenced in May, 1834, and is progressing with rapidity.

Central Rail-Road Company.—Incorporated in 1832. Capital, $2,000,000. This work will extend from Newbern, on the Neuse River, through Raleigh to Clinton, on the Yadkin, or in that vicinity. Extensions of both the above roads into Tennessee will, no doubt, if found practicable, eventually take place.

Roanoke, Raleigh and Fayetteville Rail-Road.—This road is proposed to begin at the termination of the Petersburg and Roanoke Rail-Road, on its route passing through or near the towns of Louisburg, Raleigh, and Averysboro, to Fayetteville: it will form an important link in the great chain of rail-road now progressing to the south. No positive action has as yet taken place in relation to it. The connexion, however, of this section of the United States with other parts, will no doubt render the above work hereafter indispensable. For an account of the *Petersburg and Roanoke* and *Portsmouth and Roanoke Rail-Roads*, see *Virginia*.

SOUTH-CAROLINA.

CANALS.

Santee Canal.—This canal was completed in 1802. Length 22 miles, extending from the Santee to Cooper's River. Width at the surface of the water, 32 feet, at bottom, 20; depth 4 feet. From the Santee, the ground rises 35 feet to the summit-level, which is overcome by four locks. Towards Cooper's River the descent is 68 feet, overcome by nine locks. The locks are 60 feet

long by 10 wide. Cost, $650,667. This enterprise is said to have proved disastrous to those engaged in it.

Winyaw Canal unites the Santee River with Winyaw Bay. Length, 7.5 miles.

The Saluda Canal is 6.25 miles in length. It extends from the head of the Saluda Shoals, in the Saluda River, to Granby Ferry on the Congaree, passing through Columbia. It overcomes a fall in the two rivers of 36 feet.

Drehr's Canal commences on Saluda River, about 10 miles above Columbia. Overcomes a fall of 120 feet. 1.25 miles long.

Lorick's Canal commences 1.5 miles above Columbia, is 1 mile long, and overcomes a fall of 8 feet in Broad River.

Lockhart's Canal is 2.75 miles long, and overcomes a fall in Broad River of 47 feet, around Lockhart's Shoals.

The Wateree Canal commences about 8 miles above Camden, on the west bank of the Wateree River, and is 4 miles long.

Catawba River Canals.—On the Catawba River, are four small canals, constructed for the improvement of the navigation of that stream. The first commences on the Catawba, about 25 miles above Camden, extends from the river to Rocky Creek, and is about half a mile in length. The second extends from Rocky Creek to the Catawba at Mountain Island, 1.75 miles. The third is 2.25 miles in length, and runs from Fishing Creek to the Catawba River. These three works overcome, in a distance of 8 miles, a fall of 178 feet. The fourth commences about 44 miles above Camden, and extends from Davy's Ferry to Patton's Island, a distance of 2 miles. The above described canals are on the west bank of the Catawba River.

RAIL-ROADS.

South Carolina Rail-Road.—This is the longest work of the kind yet constructed in the United States,

and the first projected in the Southern States. The company was incorporated in 1828. The road was commenced in 1830, and finished in September, 1833. It is in length 135.25 miles, commences at Charleston, and passing through Beesville, Summerville, Branchville, Midway, Blacksville and Aiken, terminates at Hamburg, on the Savannah River, opposite Augusta.

The plan of the road is unusually straight, and the curves have large radii: the profile is gently undulating, sometimes nearly level, and the maximum ascent does not in any case, exceed 30 feet to the mile. The summit of the dividing ridge, between the Savannah and Edisto Rivers, is elevated 513 feet above the tide, and one inclined plane, the only one on the line, provided with a stationary steam-engine, is resorted to at this spot, which is 114 miles from Charleston. The superstructure is supported generally on piles, which are sometimes of prodigious length. They have been driven to a great depth, in some of the marshes which the road crosses, and in other parts of the works, they form a substitute for embankments, which latter have not been resorted to, except in a few very limited situations. The railroad, in consequence, resembles a continuous bridge. The whole cost was $904,499, or $6,625 92 per mile. At Augusta, the Augusta and Athens Rail-Road will connect with it, which it is proposed to carry on westward to unite with the Tuscumbia, Courtland, and Decatur Rail-Road in Alabama, and the great Tennessee Rail-Road, to Memphis, on the Mississippi, which, when finished, will be one of the most important works in the Union, and among the noblest of the kind in the world. The route from Charleston to Hamburg is performed in from 8 to 10 hours, with locomotive engines.

Columbia and Branchville Rail-Road.—To extend from Columbia, the capital of the state, to Branchville, where it will unite with the South Carolina Rail-Road. A survey of the route has been made, and the distance found to be 62.67 miles. It attains its greatest elevation 400 feet above the waters of the Congaree River, at about 14.75 miles south of Columbia. Estimated cost, $517,96 682. About to be commenced. From Colum-

bia to Charleston, by the above and South Carolina Rail-Road, the distance will be 130 miles.

Peedee and Wateree Rail-Road.—From Cheraw to Darlington C. H. 26 miles, Sumterville 40, Nelson's Ferry 36, thence to the South Carolina Rail-Road near the 18-mile house, 33: total 135 miles. From Cheraw to Charleston, 153 miles. Public meetings have been held on the subject of the above work, and a survey recommended.

Edgefield Rail-Road.—To run from Aiken on the South Carolina Rail-Road, to Edgefield C. H. Length, 22 miles. This work is about to be commenced. From Edgefield C. H. to Charleston, 137 miles. Works of the same kind are also recommended, to extend from Cheraw, through Camden, to Columbia, 88 or 90 miles; from Barnwell C. H. to a point on the South Carolina Rail-Road; and likewise from Beaufort to Hamburg on the Savannah River, 110 or 112 miles in length.

GEORGIA.

CANALS.

Savannah and Ogeechee Canal.—This canal was constructed by the Savannah, Ogeechee, and Alatamaha Company. The work was commenced in 1825, and completed in 1829. It extends from the city of Savannah to Ogeechee River, 16 miles, uniting the waters of the Ogeechee with those of the Savannah. Width at the bottom, 33 feet; depth of water, 5 feet; lockage, 29 feet. The locks are 90 feet long by 18 wide. Cost, as estimated, $162,276; of the stock, $40,000 were subscribed by the State of Georgia. It is proposed to continue this canal to the Alatamaha, the distance of 60 miles, with a navigable feeder of 14 miles. Estimated cost, $621,156.

RAIL-ROADS.

The Brunswick Rail-Road, extending from the Alatamaha to Brunswick, is about 12 miles in length

Company incorporated in 1831. Commenced in 1832. In aid of this company, the Legislature of Georgia has lately authorized, on the part of the State, a subscription for 500 shares of its stock, or $50,000.

Savannah and Macon Rail-Road.—This is a work of great consequence to Savannah. It is now exciting considerable attention there, and a large subscription to the capital stock of the company has been proposed by the corporation of the city. A survey of the route has been made, and the construction of the road found to be quite practicable. Cost estimated at $2,000,000 or about $9523 per mile. Length, 210 miles: the greatest elevation is about 10 miles from Macon, being 550 feet above the ocean.

Augusta and Athens Rail-Road.—To extend from Augusta to Athens, 114 miles. Estimated cost, $10,000 per mile. A company has been formed, with a capital of $1,500,000. The stock has been subscribed, and the work will be immediately commenced. This may be considered an extension of the South Carolina Rail-Road. In its course from Augusta, it will be carried a little to the north of Warrenton; pass directly through Crawfordsville; 7 miles north of Greensboro'; a short distance west of Lexington; and across the Oconee, to Athens. This work is intended eventually to be carried westward and north-westward, to join the Tuscumbia, Courtland and Decatur Rail-Road, now finished in Alabama; from thence through the south-western part of the state of Tennessee, to Memphis on the Mississippi. From Charleston to Memphis by this route, the distance will be about 700 miles.

Several other important rail-roads have been projected, and in some cases companies formed for their construction. The principal of these are as follows:

Augusta and Columbus Rail-Road.—From Augusta to Columbus on the Chattahoochee. This road is to be carried through Milledgeville, Macon, &c. Lateral branches are to be constructed to various places on each side of the main trunk: the distance between the extreme points is about 210 miles. From Macon, via Forsyth and Carrollton, to Rome, at the head of Coosa, distance,

160 miles. From Heshman's Lake to Augusta, 50 miles. From Columbus to Pensacola, (see *Alabama.*)

FLORIDA.

CANALS.

A canal across the peninsula of Florida, has for some years been considered an object of national importance, and would greatly facilitate the transmission of the immense amount of produce and merchandise, constantly passing and repassing between the sea-ports on the Gulf of Mexico and the Atlantic region of the United States. It is believed the loss to the country in vessels and merchandise, occasioned by the dangerous navigation among the Bahama Islands, and around the southern point of Florida, has, in some years, amounted to a sum sufficient of itself to pay the expense of making the proposed canal. Several routes have been surveyed by officers of the United States' Engineer Department: the particular location, however, is as yet undecided.

The Appalachicola route extends from St. Mary's River, 3 miles above the town of St. Mary's, passing through Nassau, Columbia, and Hamilton counties, in nearly a westerly direction, crosses the Suwanee River at the mouth of the Withlacoochee, thence across the Oscilla River, and from thence it pursues a south-west course to Appalachicola Bay, opposite the town of Appalachicola; length, about 250 miles: its greatest altitude, 217 feet, is found between the Ocklockony and Oscilla Rivers.

The Suwanee Route commences at the mouth of the Withlacoochee River; thence parallel with the course of the Suwanee to the Indian Cowpens. Length, 75 miles; and in connexion with the former, the entire length to St. Mary's River will be about 185 miles.

The Santa Fé route commences at the mouth of the Santa Fé River; thence along the course of that stream to a point 15 miles above the Natural Bridge; thence it pursues a north-east direction across the territory, pass-

ing about 5 miles west of Jacksonville, on the St. John's River, to the St. Mary's. Length, about 120 miles.

The St. John's route runs from Hillsboro' Bay, a north-east course to the head of the Ocklawaha River, thence along the course of that stream to Orange Lake, from thence following the direction of the Jacksonville and Tampa Bay road, until it intersects Black Creek, then down the valley of that stream to the St. John's River, thence across that river, and in a direct north-east course to the mouth of Pablo Creek. Length, 225 miles.

RAIL-ROADS.

Tallahassee and St. Mark's Rail-Road.—To extend from Tallahassee the capital of Florida, to the town of St. Mark's. Length, about 22 miles. A considerable amount of stock has been subscribed for the purpose of carrying on this work, which will probably soon be commenced.

Florida Peninsula and Jacksonville Rail-Road.—To be carried from Tallahassee eastward to Jacksonville, on the St. John's River: distance about 150 miles. This work is at present strongly advocated in Florida, and is considered quite practicable—the intermediate country being favourable to such an enterprise. The completion of this road would, no doubt, add greatly to the prosperity of the territory, and facilitate the transportation of the immense property constantly in motion between the eastern and south-west regions of the Union.

In addition to the above, a new route has been lately proposed across the peninsula, which, if carried into execution, would probably prove the most expeditious and economical of any hitherto suggested. The plan is, to ascend the St. John's River, with steam-boats, to Black Creek, (a tributary of that stream, and falling into it from the westward, about 25 miles above Jacksonville,) which affords a navigation for boats of light draught of about 17 miles; from thence to construct a rail-road of 41 miles to the natural bridge on the Santa Fe River, then to the Suwanee, 28 miles by water, and

down the Suwanee River to the Gulf of Mexico, 80 miles. By the foregoing route, passengers could arrive at New-Orleans from New-York in 8 or 9 days. The distances are about as follow, viz. From New-York to Jacksonville by steam-boats, 1060; to head of navigation, on Black Creek, 42; to the Natural Bridge, 41; to the Gulf of Mexico, 108; and to New-Orleans, 400 miles; total, 1651 miles.

ALABAMA.

CANALS.

Huntsville or Indian Creek Canal.—From Huntsville to Triana, at the mouth of Indian Creek, Tennessee River, 16 miles

A canal has been proposed and a survey made, extending from the head of the Muscle Shoals in Tennessee, to Florence. Length, about 37 miles.

RAIL-ROADS.

Tuscumbia, Courtland and Decatur Rail-Road.—This work was one of the first of the kind undertaken in the south-west section of the United States. It is located on the south side of the Tennessee River, and is intended to obviate the obstruction in the navigation of that stream, occasioned by the Muscle Shoals. It extends from Tuscumbia to Decatur, 45.40 miles in length, and cost as estimated $450,000. Its greatest ascent is 28 feet per mile. This road will become a link in the great chain of rail-road contemplated from Memphis, Tenn., to Charleston and Savannah; the route of which is now under examination.

Daletown, Woodville and Greensboro Rail-Road.—To extend from Daletown, on the Alabama River, northward through Woodville to Greensboro. Length about 50 miles. Cost estimated at $400,000. A company has been organized to construct this work; a sur-

vey has also been made, and it is now probably in progress.

Erie and Greensboro Rail-Road is to commence at Erie, on the Black Warrior River, and running eastward about 17 or 18 miles, join the last mentioned work at its termination at Greensboro.

Florida, Alabama and Georgia Rail-Road.—This work, although proposed to commence in Florida, will be located, for at least three-fourths of its distance, in Alabama. It is intended to run from Pensacola, crossing the Escambia River about 22 miles above that place: thence, in nearly a straight line, a north-east direction to Columbus, Geo., on the Chattahoochee River. Length, about 210 miles. A preliminary survey of the route has been made, and the country generally found highly favourable to the location of the road.

Rail-Roads have also been proposed from Montgomery to Columbus, Geo., of from 90 to 100 miles in extent; from Montgomery to Decatur, on the Tennessee River, about 200 miles, and also from Tuscaloosa to Decatur, about 120 miles long. For an account of the *Pulaski and Florence*, and *Elkton, Athens and Decatur Rail-Roads*, see *Tennessee.*

Tennessee and Alabama Rail-Road.—Company incorporated in 1832. Capital, $3,000,000, to be divided into shares of $100 each. It is known that a population of at least 200,000 already inhabit the counties bordering on the Upper Tennessee and its tributaries, and that they have no market or outlet for their products, but the long, expensive, and almost impracticable route to New-Orleans. The country embraces about 40 counties, in Tennessee, Virginia, North Carolina and Georgia; and it is not inferior in fertility to other portions of the states to which it belongs.

The Hiwassee is a considerable stream, which rises in the mountains of Georgia, and, running a north-westerly course, discharges itself into the Tennessee above the Suck. For more than 22 miles it is navigable for steam-boats at all seasons of the year. Commencing at the head of steam-boat navigation on the Hiwassee, it is

proposed to construct a rail-road to M'Nair's boat-yard, on the Connesauga, an upper branch of the Coosa, distant 16 miles. Cost, estimated at $51,000. From M'Nair's boat-yard, descending the Connesauga to New Echota, a good navigation for tow-boats, drawing two feet of water, may be perfected at an expense of $8,000. Echota may be considered the limit of steam-navigation. The river then takes the name of the Oostenaula, and, for the space of 60 miles, descending to the head of the Coosa, every obstacle to an uninterrupted navigation may be removed for $5,000. Thence to the Ten Islands, 105 miles, all obstructions may be removed for $1,000, making, in all, 271 miles of communication to be effected at the expense of $65,000. From the Ten Islands to Selma, in Alabama, the distance is 105 miles, and it is proposed to connect these two points by a rail-road, the estimated cost of which is $735,000. Making the aggregate distance from the Tennessee to Selma, on the Alabama, 371 miles, and to Mobile 600 miles; and the whole cost of the improvements $800,000.

A rail-road is proposed to run from Mobile to Cedar Point, 25 miles.

MISSISSIPPI.

A BOARD of internal improvement was organized by the Legislature in 1829, consisting of the Governor and three Commissioners. The board was authorized to employ a civil engineer, and to negotiate a loan of the sum of $200,000 upon the credit of the state, to be appropriated to the improvement of the navigable streams and public roads within the state. By an act of Congress, passed March 1, 1817, 5 per cent. of the net proceeds of the sales of public lands within the state were reserved for making roads and canals; and three-fifths of this (called *the three per cent. fund*) are subject to appropriation by the state Legislature to those objects *within* the state; the other two-fifths are at the disposal of Congress for roads leading to the state.

RAIL-ROADS.

West Feliciana and Woodville Rail-Road.—A rail-road is projected from Woodville, in this state, to St. Francisville, in Louisiana. Three routes have been surveyed, and one of them selected for the greater portion of the distance. Length, 23 miles. Cost, estimated at a little less than $6,000 a mile. The requisite funds have been obtained for this work, and operations are expected to commence early in 1835.

Vicksburg and Clinton Rail-Road.—A company has been formed to construct a rail-road from Vicksburg, on the Mississippi River, eastward to Clinton, about 44 miles. A bank, called the Vicksburg Commercial and Rail-Road Bank, will be connected with it, and operations on it will soon be commenced. An extension of it to Jackson, the capital of the state, is hereafter contemplated. From Clinton to Jackson, 10 miles.

Grand Gulf Rail-Road.—A banking and rail-road company has been organized, and is about to construct a rail-road from the town of Grand Gulf, at the mouth of the Big Black River, to Port Gibson, S. E. 7 miles.

Natchez and Jackson Rail-Road.—A rail-road from Natchez to Jackson, on Pearl River, about 90 miles, and from thence to Livingston, 31 miles in length, is contemplated. Considerable excitement exists in that part of the state through which the above roads are proposed to be carried. Many meetings of the people have been held in different places, and the roads will doubtless be eventually constructed. Towards the construction of the road from Natchez to Jackson, $200,000 have been lately subscribed.

LOUISIANA.

CANALS.

Carondelet Canal extends from Bayou St. John, to a basin in the rear of the city of New-Orleans. It is 1½ miles long, 30 feet wide, and 4 deep.

Lake Verret Canal passes from the River Lafourche, 16 miles below its efflux from the Mississippi. It opens from the right bank of the river into a small creek uniting with Lake Verret, and is navigable only in times of high water. Near 8 miles in length.

Plaquemine Canal is a short cut from the Mississippi into Bayou Plaquemine; navigable only in times of high water.

Lafourche or New-Orleans and Teche Canal is a partly executed natural and artificial navigation of about 85 miles in length, extending from a point on the Mississippi, opposite to New-Orleans, to the waters which unite with Teche River, at Berwick's Bay.

RAIL-ROADS.

Lake Ponchartrain Rail-Road.—Company incorporated in January, 1830, with exclusive privileges for 25 years. It is about 4½ miles long, extending from Lake Ponchartrain to New-Orleans. Single track. It is perfectly straight, and nearly level, the ascent and descent being only 16 inches. Completed in April, 1831. Cost, $15,000 a mile. An act of Congress has been obtained, establishing a port of entry on Lake Ponchartrain; and an artificial harbour and breakwater are now constructing at the termination of the rail-road.

West Feliciana and Woodville Rail-Road.—To extend from the Mississippi, near St. Francisville, to Woodville in the state of Mississippi. (See *Mississippi.*)

In the Legislature of this state, a bill was lately introduced in which the most magnificent scheme of internal improvement ever contemplated, was submitted. The bill proposes the incorporation of a company with a capital of $20,000,000, to construct a rail-road from New-Orleans to Baton Rouge, St. Francisville, and Clinton, thence eastwardly to the boundary line of Mississippi. It is recommended as part of a great route through Mississippi, Alabama, Georgia, North and South Carolina, and Virginia, to Washington City. One of

its advocates affirms, that if these states will pass laws to authorize the construction, companies will be formed for continuing the road, so that within twenty years a trip from New-Orleans to Washington will not occupy more than six days.

New-Orleans and Nashville Rail-Road.—A rail-road has lately been proposed to extend from New-Orleans to Nashville, Tenn., from 480 to 500 miles in length. The highest elevation on the route, is about 500 feet. With locomotive engines, intercourse between the two cities will occupy about 2 or 2½ days: at present, by steam-boats, even under favourable circumstances, from 10 to 12 days is the length of a voyage. The execution of this work is recommended by Gov. Romans, of Louisiana, in his late annual message to the Legislature, in the following terms:

"The expediency of the execution of the rail-road between New-Orleans and Nashville, appears to me to deserve your attention. This road, if it was undertaken, would soon be extended from Nashville by way of the valley of Virginia to Washington, and the distance which separates us from the seat of the federal government, could be easily travelled in 5 or 6 days. It is useless for me to expatiate on the advantages which such a route would afford, whether considered in reference to our commercial relations in peace, or to our means of defence in war."

A rail-road is likewise proposed to run from Clinton to Port Hudson, about 22 miles.

TENNESSEE.

In this state a spirit highly favourable to internal improvement has been lately excited. Public meetings have been held, and projects discussed, which will doubtless result in consequences important to the state. Its vast resources will be developed, and its mineral wealth will be enjoyed by those who now possess them, instead of being wholly reserved for future generations.

INTERNAL IMPROVEMENTS.

Surveys have been made under a late appropriation of Congress, with a view to the improvement of the navigation of the Tennessee River. Others have been made to ascertain the practicability of effecting a navigable communication between the head waters of the Hiwassee and Savannah Rivers, and also between the Tennessee and Coosa, by the valleys of Lookout and Wills' Creeks, and by those of the Chickamauga and Little Rivers. It is likewise proposed to connect the Hiwassee River with the head waters of the Connesauga, the most northern branch of the Coosa; whence, by the improvement of the river channels, and a series of rail-roads, a communication is intended to be completed to the waters of the Gulf of Mexico, at Mobile. (For a detail of the plan of this improvement, see *Alabama.*)

RAIL-ROADS.

Middle Tennessee Rail-Road.—This work is to run from Columbia in a south-west direction, to or near Waynesborough, and thence to a suitable point on the Tennessee River, probably Carrollville: here it will join the great Mississippi and Atlantic Rail-Road, lately projected. Five routes have been surveyed, varying from 57 to 65 miles, and estimates made of its cost, of from $374,970 to $441,450.

The above road will probably be carried to Nashville, 42 miles, and a branch will also extend to Murfreesborough, 45 miles in length. A rail-road is likewise recommended from Nashville to Louisville, Kentucky; distance, about 180 miles.

Pulaski and Florence Rail-Road.—This will extend from Pulaski to Florence, Alabama. The route has been surveyed, a company formed to carry it on, and the stock subscribed. Distance, 55 miles. It is about to be commenced.

Elkton, Athens, and Decatur Rail-Road is to run

from Elkton, through Athens, to the Tennessee River, opposite Decatur, Alabama. Length, 33 miles.

Jackson and Mississippi Rail-Road.—This road is to commence at Jackson and terminate probably at Randolph or Fulton, on the Mississippi River. By surveys made, the length has been found to be 58 miles; and the estimated cost of a road similar to the South Carolina Rail-Road, $337,052 50, to be finished in 1837. This work will probably be carried eastward and unite with the middle Tennessee Rail-Road in the vicinity of the Tennessee River.

Mississippi and Atlantic Rail-Road.—The intention of this great scheme of internal improvement, is to connect the Atlantic Ocean with the Mississippi River. The route by which it is intended to carry it, has been for some time under examination by an able officer of the United States' Engineer Corps. Parts of it have been reported as quite practicable. Should the whole of it be found of the same character, it will no doubt be immediately commenced. A laudable spirit is aroused in those sections of the country that expect to be benefited by it; and important results will no doubt follow. It is to commence at Memphis, on the Mississippi River, and passing through Somerville and Bolivar, cross the Tennessee River, either at Carrollville or Savannah, or in that vicinity; thence nearly south to Tuscumbia, Alabama: here the Tuscumbia, Courtland and Decatur Rail-Road will form a part of the line from Decatur, running nearly south-east; it will cross Will's Creek at or above its mouth, and entering the state of Georgia, pursue an east course to Athens on the Oconee River; hence to Augusta—the Augusta and Athens Rail-Road will constitute no inconsiderable portion of it—and from Augusta to Charleston, the South Carolina Rail-Road will complete this magnificent line. From Augusta to Savannah a rail-road will probably be hereafter considered advisable, in order to attract to that city a portion of the vast trade that will flow into Augusta on the completion of the line described above. Distance from Memphis to Savannah, about 675, and to Charleston, 700 miles.

KENTUCKY.

Louisville and Portland Canal.—Incorporated in 1825. Completed in 1831. Length, 2 miles; breadth, at the surface, 200 feet—at bottom, 50. This canal was constructed to overcome a fall of 22 feet on the Ohio River, at Louisville. The entire bed of this canal is excavated through a ledge of lime rock, and a part of it to the depth of 12 feet. Its locks, bridges, &c., are built in the most substantial manner, and contain 4989 perches of stone-masonry, equal to about 30 common canal locks. It is a work of great utility, as well as great expense. It is calculated that there will annually pass this canal about half as much tonnage as is employed in the coasting trade of the United States. From the difficulty of excavating earth and rock from so great a depth and width, together with the contingencies attending its construction from the difference of level between the highest and lowest stage of the water in the Ohio River, amounting to about 60 feet, it is necessarily a work of great magnitude, having cost more than any other similar extent of canal work in the United States; and for its length, is perhaps the most important hydraulic work of the kind ever executed.

Lexington and Ohio Rail-Road.—This road commences at Lexington; passes through Frankfort, and terminates at Shippingport, on the Ohio River, 2 miles below Louisville. When finished, it will be about 90 miles in length. The construction of this work is said to be equal to any, and superior to most other rail-roads in the United States: it has no curve with a less radius than 1000 feet. That part between Lexington and Frankfort, 29 miles, has been completed at an expense, including machinery, of $400,000. The remaining 61 miles of the road will probably be completed for $500,000, or about $8,200 per mile. Opened for use December 30th, 1834. Steam locomotives run on this road from Lexington to Frankfort.

A rail-road from Louisville to Nashville has been strongly recommended. Distance, about 180 miles.

OHIO.

CANALS.

The Ohio state canals were projected about the year 1823, and have been, so far as completed, in successful operation for some time. If all the circumstances are considered, they are undoubtedly the greatest works ever executed in America. Only forty years ago, the ground now comprising that state was a wilderness; and forty-four years since, a United States' army was defeated by savages, on the very section of this youthful state where now a canal is navigated. The influence of these great works is already visible in the increase of commerce and travel. Substantial improvements have been wrought in the country they traverse, and there has been a regular arrival and departure of packet and freight boats at a season of the year when navigation has been hitherto unknown.

The Ohio and Erie Canal connects Lake Erie with the Ohio River. It commences at Cleveland, at the mouth of the Cuyahoga, and passing through a number of towns on its route, joins the Ohio River at Portsmouth. The principal places on the canal are Akron, New Portage, Massillon, Bolivar, New Philadelphia, Coshocton, Newark, Bloomfield, Circleville, Chillicothe, Piketon, and Portsmouth. The above work was commenced on the 4th of July, 1825, and completed in 1832; and, together with the Miami Canal, cost about $5,500,000, which are now beyond all question worth to the state three times that amount; and have, in many places on and near their location, quadrupled the value of private property.

The Miami Canal commences at Cincinnati, and passing through the towns of Reading, Hamilton, Middletown, Franklin and Miamisburg, terminates at Dayton. It has been navigated from Dayton to the head of the main street in Cincinnati, since the spring of 1829. An extension of this work is now in progress. It is to

be carried along the valleys of the St. Mary's and Au Glaise Rivers, and join the Wabash and Erie Canal at Defiance; distance from Cincinnati about 190 miles. A new section will probably be opened for use, early this season, to Piqua, 29 miles above Dayton.

Ohio and Erie Canal.

	Miles.
Main trunk,	310
Navigable feeder from main trunk to Columbus,	11
Navigable feeder from main trunk to Granville,	6
Muskingum side-cut, from the Muskingum River at Dresden,	3
Navigable feeder from the Tuscarawas River,	3
Navigable feeder from the Walhonding River,	1
Total length of Ohio Canal and branches,	334

Miami Canal.

Main trunk,	65	
Hamilton side-cut,	1	66
Total length of canals in Ohio constructed at the public expense, and owned by the state,		400
Lancaster lateral canal, constructed by the citizens of Lancaster, under an act of incorporation,		9
Total length of canals in Ohio,		Miles, 409

Amount of Tolls received from the Ohio Canals, for the year ending October 31, 1834.

Ohio and Erie Canal,		$151,287 84
Miami Canal,		49,503 28
		$200,791 12
Expenditures on the Ohio and Erie Canal,	$7,860 18	13,858 35
Do. Miami Canal,	5,998 17	
		186,932 77
Water Rents,		4.511 75
Net Revenue,		$191,444 52

An act was passed by the Legislature of Ohio, March 3, 1834, for continuing the Wabash and Erie Canal from the western boundary of the state to a point on or near Maumee Bay. Commissioners were appointed and empowered to survey and locate the work. Operations have, however, been suspended until the ques-

tion now in agitation, relative to the settlement of the boundary line between Ohio and Michigan, is decided by Congress.

Mahoning and Beaver Canal.—A branch from the Ohio and Erie Canal has been for some years contemplated, and is at present strongly advocated in the Legislature of the state, and by all those who are interested in the welfare of Ohio. It is proposed to carry it from Akron, on the Portage Summit, along the valley of the Mahoning River, to Newcastle, on the Beaver division of the Pennsylvania Canal; distance in Ohio, about 77 miles, and in Pennsylvania, 8: total length, 85 miles. This route to the Atlantic section of the Union would give the people of Ohio a choice of two, and eventually, (when the Baltimore and Ohio Rail-Road and the Chesapeake and Ohio Canal are completed,) three great markets; and would, immediately on its completion, induce the states of Pennsylvania and New-York, in order to secure for their respective state improvements as large a share of the western trade as possible, to reduce the tolls to the lowest rates of profit, perhaps to one-half, or even less, of what they are at present: an advantage alone of immense value to the western states generally. The above proposed route would also furnish a continuous communication with the sea-board, of from six to eight weeks longer in the season, than is at present attainable by the Erie Canal. (See *Beaver Division Pennsylvania Canals*, page 30.)

Sandy Creek and Little Beaver Canal.—In 1828 the Legislature incorporated a company to construct a canal from the mouth of Sandy Creek, near Bolivar, on the Ohio and Erie Canal, to or near the mouth of Little Beaver River, on the Ohio; to be organized as soon as $150,000 were subscribed. The requisite funds being obtained, a survey has been made, and the construction of the work is about to commence. The practicability of this canal has by many persons been considered doubtful, from a supposed deficiency of water on the summit-level. These fears being found groundless, it is believed that no natural impediment exists to the completion of the work. Length, about 60 miles. An

extension of this canal will no doubt be carried to the town of Beaver, distant about 16 miles, and form another link of connexion (in addition to the one described immediately above), between the state canals of Pennsylvania and those of Ohio.

RAIL-ROADS.

A number of companies have, at different times, been incorporated by the Legislature of Ohio, to construct rail-roads in various parts of the State, of which the following are the principal:

Mad River Rail-Road will extend from Dayton, the present termination of the Miami Canal, to Sandusky, on Lake Erie. Its course will be through Springfield, Urbanna, Bellefontaine, Upper Sandusky, and Tiffin. The route is stated to be remarkably adapted to the use of locomotive power, as there is not an elevation on the line which will require the aid either of animal or stationary power. Length, 153 miles. Estimated cost, $11,000 per mile.

The Erie and Ohio Rail-Rood will pass from the Lake at Ashtabula or Fairport, through Warren, to Wellsville, on the Ohio River, a distance of 90 miles.

The Pennsylvania and Ohio Rail-Road is designed to extend from the Ohio Canal, at Massillon, to Pittsburg; passing through the valley of the Little Beaver River to the Ohio, by which it is expected to divert much of the trade which would otherwise go to New-York. Length, 108 miles.

The Columbus, Delaware, Marion, and Sandusky Rail-Road will run from Columbus, the capital of the State, to Sandusky city; passing through Delaware, Marion, and Bucyrus. Length, 115 miles.

The Milan and Newark Rail-Road will extend from Lake Erie, at or about the mouth of Huron River, through Milan, Mansfield, Mount Vernon, and probably other places, to Newark, on the Ohio and Erie Canal: distance, about 95 miles.

The Chillicothe and Lebanon Rail-Road will open a

communication from Chillicothe, through Hillsborough, Wilmington, and Lebanon: distance, 80 miles. This work will probably be extended to the Miami Canal, a further distance of 15 miles.

The Franklin, Springboro', and Wilmington Rail-Road will extend from Franklin, on the Miami Canal, passing through Springboro' and Waynesville, to Wilmington: here it will form a communication with the Chillicothe and Lebanon Rail-Road. Length, about 32 miles.

The Richmond, Eaton and Miami Rail-Road is designed to commence at Dayton, the termination of the Miami Canal, and pass through West Alexandria and Eaton, to Richmond, Indiana. Length, 27 miles.

The Cincinnati, Harrison and Indianapolis Rail-Road.—This work is intended to open an easy communication from Cincinnati, through Harrison, Brookville, and Rushville, to Indianapolis, the capital of Indiana: distance, 110 miles.

In addition to the above specified rail-roads, the following have been lately proposed, and some of them incorporated, viz. Painsville and Grand River, Erie and Muskingum, Cadiz and Philipsburg, and Steubenville and Ohio; also, from Maumee Bay, on Lake Erie, to the falls of Illinois River—about 300 miles. This is the most direct route yet contemplated, between the Lakes and the Mississippi River.

MICHIGAN.

RAIL-ROADS.

Detroit and Michigan Rail-Road.—At a public meeting held at Detroit, some time since, the project of a rail-road from that city to the mouth of the St. Joseph's River on Lake Michigan, was discussed. The result of a partial survey made in reference to that object by an officer of the United States' Engineer Corps, was submitted to the meeting; by which it was found that

the proposed work was entirely practicable, and the face of the country unusually favourable for its location. The greatest elevation between Lakes Michigan and St. Clair, was stated to be 170 feet. Distance between the extreme points, 185 miles. Another work of the same kind has been suggested from Maumee Bay, on Lake Erie, to Michigan city, on Lake Michigan: distance about the same as the above. The completion of either of the above works, would, in connexion with the proposed canal or rail-road, from Chicago to the falls of Illinois River, form the shortest and most direct communication between the waters of Lake Erie and the Mississippi River, yet proposed.

Detroit and Pontiac Rail-Road.—A rail-road from Detroit to Pontiac, distance 26 miles, will probably soon be constructed, as a company has been recently organized to carry it into execution.

INDIANA.

CANALS.

Wabash and Erie Canal.—By the Legislature of 1832, an act was passed, supplemental to an act providing means for the construction of this canal. By this act, steps were taken to realize and render available the donation of lands, granted for this purpose, by the United States. Commissioners were appointed to borrow money on the credit of the state for the prosecution of the work, and a train of measures arranged, tending to a speedy completion of a union between the waters of Lake Erie and Indiana.

This work will extend from or near Lafayette, on the Wabash River, up the valley of that stream, across to the Maumee at Wayne, 105 miles. The cost of constructing it is estimated at $1,081,970, and lands to the amount of 355,200 acres, valued at $756,750, have been granted by Congress to assist in carrying it on. This canal is now in active progress; 30 miles of it were put

under contract in 1833, 36½ miles in 1834, and 15 miles completed late in 1834. About the beginning of the summer of 1835, the first 30 miles westward from Wayne will be completed and in use. The whole canal is expected to be finished within the year 1836. Of the lands granted by Congress, there had been disposed of, up to November, 1834, $67,503 50. This work will be carried from Wayne to the east boundary of the state, a distance of 22 miles: here it will unite with that part of it authorized by the state of Ohio. The whole distance from the point of commencement to or near Maumee Bay, will be about 187 miles.

The White Water Canal.—It is proposed to commence this work on the west branch of White Water River, near Nettle Creek; and, following the course of the stream, it will pass through Connersville, Somerset, Brookville, and other towns, on its route to Lawrenceburg on the Ohio River. Length, about 76 miles. Estimated cost, $1,141,000. The canal, in addition to the water required for the purposes of navigation, will furnish sufficient water-power to turn 360 pair of 4-feet stones; and the transportation will be, it is estimated, double that of the Miami Canal from Dayton to Cincinnati. A junction or cross-cut canal from the Miami Canal to a point on the White Water Canal, is recommended in Ohio.

A canal is proposed to extend from a point on the Wabash River, between New-Harmony and the Grand Chain in the Wabash River, to the Ohio River near Mount Vernon; and another from Muncy Town, on the head waters of White River, along the west bank of that stream, to its junction with the Wabash River.

RAIL-ROADS.

The construction of the following rail-roads is contemplated in this state, viz. From Evansville, on the Ohio, to Lafayette, on the Wabash, about 175 miles in length: from Lafayette to Michigan City, on Lake Michigan, 90 miles; this will be a continuation of the

first, and form a continuous rail-road from the Lake to the Ohio River, of 265 miles in length: from Madison, on the Ohio River, to Indianapolis, the capital of the state, 85 miles: from or near the Falls of Ohio, opposite Louisville, Ky., to a point of intersection on the Madison and Indianapolis Rail-Road, near Columbus, 65 miles: from Lawrenceburg, on the Ohio, to Indianapolis, 92 miles: from New-Albany, on the Ohio, to Terre Haute, on the Wabash River, 130 miles: from Leavenworth, on the Ohio, to a point of intersection on the New-Albany and Terre Haute Rail-Road, at or near where the same may cross the east fork of White River, about 45 miles: and from Connersville, on the west fork of White Water River, to the county-seat of Huntington County, 90 miles; this will unite with the Wabash and Erie Canal. To aid in the prosecution of the above works, a bill has been lately reported in the Legislature of the state, "authorizing the canal fund commissioners to borrow on the faith of the commonwealth $1,400,000, in Europe or elsewhere, provided the interest on the same shall not exceed 4½ per cent. per annum; reimbursable any time after thirty years and within fifty years, pledging the 3 per cent. fund for the payment of the interest on the sum borrowed, to be advanced as needed in the construction of rail-roads.

For the *Cincinnati, Harrison and Indianapolis Rail-Road*, and *Richmond, Eaton and Miami Rail-Road*, see *Ohio*.

ILLINOIS.

The Illinois and Michigan Rail-Road is intended to commence at Chicago, on Lake Michigan, and continue in a south-westerly direction 11½ miles to the summit-level: in this distance the ascent is only 25 feet. After passing the summit-level it is to cross and continue along the River Des Plaines to the foot of the Illinois rapids, the distance of 85 miles, with a descent of exactly 2 feet per mile: thus giving, in a distance of 96½ miles, only 193 feet of rise and fall. From the termination

of this rail-road, the Illinois River is navigable about 250 miles to the Mississippi.

A canal has been for some time past projected, to traverse the same route as that described above for the rail-road. The route has been surveyed, and about 480,000 acres of land granted by the general government of the state for carrying it on. Much greater difficulties than were at first anticipated, have been ascertained to exist in the nature of the ground, from Chicago to the Des Plaines River, a distance of 20 miles, there being a substratum of solid limestone a few feet below the surface. This circumstance will probably render the rail-road the more eligible improvement; the completion of either or both of them, will make Chicago a place of consequence, and will form admirable facilities for the transportation of merchandise from the eastern to the Mississippi region of the Union.

The estimated cost of a rail-road over the route described above, is $1,005,488; of a canal drawing water from the lake the whole distance, $4,043,036; if supplied from other sources, and lock down each way from the summit, it may be made for $1,601,695. A ship-canal could probably be constructed, locking both ways, for $4,000,000; and on a level with the lake, for about $6,000,000. Governor Duncan, in his late message to the Legislature of Illinois, strongly recommends to the notice of that body the project of a steam-boat canal for the route from Chicago to the falls of Illinois, and advocates at some length the superiority of an intercourse of that kind over every other.

A rail-road is contemplated to extend from the commencement of the Wabash and Erie Canal, westward to the Mississippi.

A rail-road is also proposed to run from Alton to Springfield, 70 miles.

WISCONSIN TERRITORY.

CANAL.

A CHARTER has been granted to construct a canal at Fort Winnebago, to connect the Wisconsin with the

Fox River of Green Bay: these approach so near to each other, as to leave a portage of only 1.5 miles between them. It is one of the great natural channels of communication between the lakes and the Mississippi. A canal can probably be made here, at a comparatively small expense; the elevation of the intervening ground being so trifling, that when the rivers are in flood, they frequently mingle their waters with each other. A steam-boat ascended the Wisconsin to the portage, some time ago; and it can probably be navigated a considerable part of the year by steam-vessels adapted to its navigation. It is a rapid stream, and is unobstructed by cataracts. The Fox River is also navigable to the portage. This is the most direct channel of communication between the settlements on the Upper Mississippi and the Atlantic section of the Union.

INTERNAL IMPROVEMENTS IN CANADA.

CANALS.

Welland Canal.—The successful completion of the New-York Canals, rendered it obvious to the authorities and people of Canada, that the Erie Canal, in particular, would divert an immense amount of trade from the St. Lawrence River, to the city of New-York. With a view to obviate the consequences of such a result, and to accelerate the settlement and improvement of their vast tract of land in the upper province, the Canada Land Company projected, and have in a great part executed, the Welland Canal. Considering the colonial condition of Canada, the thinness of population, and the limited resources of the country, it is impossible to repress our admiration of the splendid design, and prompt execution, of this great work. This Canal opens a navigable communication between Lake Erie and Lake Ontario, and overcomes all the descent of Niagara Falls and Niagara River, between the two lakes. It admits vessels of 125 tons burthen, being wider and deeper

than any similar work in America, with the exception of the Chesapeake and Delaware, and Louisville and Portland Canals. It commences at Port Maitland, on Lake Erie, at the mouth of the Ouse, or Grand River; follows the channel of that stream, for a short distance; and, by a cut of 10 miles, crosses the Wainfleet marshes, to the Welland, or Chippeway River; up the channel of which stream it passes, for a distance of about 10 miles. To this point, its direction has been north-east. Hence, the Canal passes, in a northern course, to the summit-ridge: here, it traverses a stupendous deep-cut, of two miles in extent, which required prodigious excavations, in some parts through solid stone: at this place, nearly the whole difference of level between Lake Erie and Lake Ontario is overcome, by a series of locks seventeen in number. The deep cut, and locks, are considered one of the most striking canal spectacles in America. At the foot of this series, the Canal is led along a ravine 2.5 miles, by 12 locks, to St. Catherine's. Having descended from the summit-level 322 feet, from the latter point to Lake Ontario, five miles, the Canal reaches, by four locks, its northern termination, at Port Dalhousie, on Lake Ontario. Length, from Port Maitland to Port Dalhousie, 42 miles; descent, 334 feet; locks, 34 in number, all descending. The dimensions of the locks north of the summit-ridge, are, 22 feet wide, 100 feet long, and 8 feet deep; those on the south side of the ridge, are 45 feet in width, and 120 feet in length. This work cost about $1,000,000.

Rideau Canal.—This work is intended, by opening a navigable communication between Lake Ontario and the Ottawa River, to obviate the difficult navigation of the St. Lawrence River, above Montreal; and, in time of war, to secure the transportation of military stores, by an interior route less exposed to American assault, than that along the St. Lawrence and Lake Ontario. A line of frontier fortresses is to be built, in aid of this object; the whole being estimated to cost between five and six millions of dollars. This, like the Welland Canal, is a great undertaking, carried over hills and rivers, and through morasses. These vast works have

wrought the same results as in the United States: towns have grown up along the line of their course, even before they were completed, as by enchantment. Among the many examples that may be cited, Bytown, at the junction of the Canal with the Ottawa River, was a solitary wilderness in 1826. In 1829, it contained a market, a school-house, four churches, and nearly 2000 inhabitants. Magnificent roads and bridges are constructed; and those vast triumphs over nature, in her wildest regions of Canadian forests, cascades, vast rivers, and precipices, have brought to view rivers and lakes, the existence of which, previous to these, were hardly known.

This important work, now in rapid progress towards completion, is under the direction of a board of commissioners, assisted by a corps of Royal Engineers. It commences on Lake Ontario, at Kingston, and pursues a north-east direction through Cataraqui and Indian Rivers, and also through several lakes, with some of which it is identified in its course, until it reaches Rideau Lake, the summit-level, 165 feet above Lake Ontario. At the outlet of Rideau Lake, it intersects the river of the same name, and pursues its route in a north-east direction, sometimes in the bed of the Rideau, and sometimes along its banks, to the Ottawa, or Grand River, at Bytown, about 135 miles above Montreal, by the course of the stream. Length from Lake Ontario to Bytown, 130 miles; to Montreal, by the Canal and the Ottawa River, 265 miles. The locks are 53 in number; each 134 long, by 33 feet wide. The ascent, from Kingston to the summit-lake, is by 19 locks, overcoming an elevation of 165 feet; descent, from Lake Rideau to the Ottawa River, by 34 locks, 290 feet: total lockage, 455 feet. The Ottawa, at Bytown, is about 125 feet below the level of Lake Ontario, and about 110 feet above the level of the St. Lawrence River, at Montreal. The above work is estimated to cost, when completed, about one million of pounds sterling.

La Chine Canal—On the Island of Montreal. Commences a few miles above the city of Montreal. It was constructed to overcome the impediment in the navigation of the St. Lawrence River, occasioned by the Ra-

pids of St. Louis. Nine miles in length; and cost $220,000.

Ontario and Rice Lake Canal.—The British government has it in contemplation to construct a canal from Port Hope, on Lake Ontario, to Rice Lake, a distance of 14 miles. The cost is estimated at £101,535 15*s.* 6*d.* The elevation to be overcome is 361 feet. This will be the first step in a plan of communication, for connecting Lakes Huron and Ontario. The navigation will be carried through, or along, the Otanabee River, and the chain of Lakes whose waters are discharged into Rice Lake, by that stream, viz. Trout, Shemong, Pigeon, Sturgeon, Cameron's, and Balsam Lakes. A cut of a few miles will unite the latter with Talbot River, of Lake Simcoe: from thence to Gloucester Bay, of Lake Manitouline, (the great eastern arm of Lake Huron,) the communication is considered to be entirely practicable, either by a Canal direct to the Bay, of from 25 to 30 miles in length, or by improving the Severn River, which is the outlet of Simcoe Lake. The entire route, from Port Hope to Gloucester Bay, will be about 180 miles.

NOVA SCOTIA.

Shubenacadie Canal.—A company for the construction of this work was incorporated June 1, 1826, with a capital of £75,000, of which the Colonial Legislature subscribed £15,000. It is intended to unite the waters of the Basin of Mines, or Minas, with Halifax Harbour; and if completed will no doubt prove a work of great importance and value to Nova Scotia. Its route traverses the best cultivated districts of the province, and will afford an easy and cheap communication to Halifax market, for the produce of all the townships on the Minas Basin. It is 53.5 miles in extent, designed to admit vessels drawing 8 feet water, and to be 60 feet wide on the surface, and 36 at the bottom. This work has been prosecuted to a considerable extent, but owing to an error in judgment in the manner of carrying it towards completion, it has entirely failed, and is now under mortgage to government for £25,000. The funds required to finish it have been found greatly to exceed the original estimate, and all attempts to increase the stock proving fruitless, the work is for the present abandoned. A recent survey of it has been made by a competent engineer, and the sum necessary for its completion estimated at £75,000.

Cumberland and Bay Verte Canal is contemplated to be carried across the narrow isthmus which connects Nova Scotia with New Brunswick; to extend from Cumberland Basin, at the head of the Bay of Fundy, to Bay Verte, in Northumberland Straits. Distance, 11 miles. A survey has been made, and the ground found favourable to its prosecution. Estimated cost, to admit vessels drawing 8 feet water, £68,000.

DISTANCES, IN MILES, FROM PLACE TO PLACE.

ON SOME OF

THE PRINCIPAL CANALS AND RAIL-ROADS.

ERIE CANAL.

Albany to Buffalo.

	Miles.	Miles.
Washington	5.00	
Gibbonsville	.50	5.50
West Troy	1.25	6.75
Junction of the Erie and Champlain Canals ..	2.25	9.00
Lower Aqueduct	4.00	13.00
Wat Hoix Gap ..	2.50	15.50
Upper Aqueduct.	9.50	25.00
Schenectady	4.00	29.00
Plattekill Aqueduct	5.00	34.00
Florida Aqueduct	10.00	44.00
Schoharie Creek.	8.00	52.00
Auriesville	2.00	54.00
Fulton	4.00	58.00
Riker's Basin ...	7.00	65.00
Spraker's Basin..	2.00	67.00
Canajoharie.....	3.00	70 00
Fort Plain	3.25	73.25
Nowadaga Creek	9.75	83.00
Fall Hill Ravine.	4.00	87.00
Little Falls	1.00	88.00
German Flats ...	3.00	91.00
Fulmer's Creek Aqueduct	6.00	97.00
Myers' Creek do.	4.00	101.00
Ferguson's do ...	6.00	107.00
Utica	3.00	110.00
Whitesboro'	4.00	114.00
Oriskany	3.00	117.00
Rome	8.00	125.00
New-London....	7.00	132.00
Loomis.....	6.00	138.00
Oneida Creek ...	3.00	141.00
Lenox Basin	3.00	144.00
Canastota.....	2.00	146.00
New-Boston	4.00	150.00
Chitteningo.....	4.00	154.00
Kirkville	4.00	158.00
Manlius.....	4.00	162.00
Orville	3.00	165.00
Syracuse	6.00	171.00
Geddesburg.....	2.00	173.00
Nine Mile Creek.	6.00	179.00
Camillus	1.00	180.00
Canton.....	5.00	185.00
Jordan	6.00	191.00
Weed's Point ...	6.00	197.00
Centre Port.....	1.00	198.00
Port Byron.....	2.00	200.00
Montezuma.....	6.00	206.00
Clyde	11.00	217.00
Lyons.....	9.00	226.00
Lockville.....	6.00	232.00
Newark	1.00	233.00
Port Gibson.....	3.00	236.00
Palmyra.....	5.00	241.00
Fair Port	11.00	252.00
Fullam's Basin ..	2.00	254.00
Pittsford.....	6.00	260.00
Brighton	6.00	266.00
Rochester	4.00	270.00
Spencer's Basin .	10.00	280.00
Ogden	2.00	282.00
Adams' Basin ...	3.00	285.00
Brockport	5.00	290.00
Holley	5.00	295.00
Murray	2.00	297.00
Albion	8.00	305.00
Portville	4.00	309.00
Oak Orchard....	5.00	314.00
Medina	1.00	315.00
Middleport	6.00	321.00
Lockport	12.00	333.00
Pendleton	7.00	340.00
Tonnewanta....	12.00	352.00
Black Rock.....	8.00	360.00
Buffalo.....	3.00	363.00

CHAMPLAIN CANAL.

Albany to Whitehall.

West Troy	7.00	
Junction	2.00	9.00
Waterford.....	2.00	11.00
Mechanicville ..	8.00	19.00
Stillwater	4.00	23.00

Bemus Heights..	3.00	26.00
Schuylerville ...	9.00	35.00
Guard Gates	2.00	37.00
Fort Miller	3.00	40.00
Fort Edward	8.00	48.00
Kingsbury	5.00	53.00
Fort Anne	7.00	60.00
Narrows	6.00	66.00
Whitehall	6.00	72.00

MORRIS CANAL.

Newark to Phillipsburg, opposite Easton, Pa.

Bloomfield	5.50	
Paterson	9.00	14.50
Little Falls	5.00	19.50
Mead's Basin ...	3.50	23.00
Montville	7.00	30.00
Powerville	3.50	33.50
Rockaway.....	5.50	39.00
Dover.....	4.00	43.00
Drakesville	7.00	50.00
Outlet of Hopatcong Pond	2.50	52.50
Stanhope	2.50	55.00
Hacketstown....	9.50	64.50
Anderson.....	8.00	72.50
Mansfield	3.00	75.50
Broadway	4.00	79.50
New Village....	2.50	82.00
Phillipsburg	8.00	90.00

DELAWARE AND RARITAN CANAL.

Bordentown to New Brunswick.

Lamberton	4.50	
Trenton	1.50	6.00
Lawrence's Meadows.....	4.50	10.50
Stony Brook	3.00	13.50
Rocky do	3.50	17.00
Kingston	2.00	19.00
Rocky Hill	2.00	21.00
Griggstown	2.50	23.50
Blackwell's.....	4.00	27.50
Millston.....	2.50	30.00
Bound Brook....	5.50	35.50
New Brunswick.	6.50	42.00

CAMDEN AND AMBOY RAIL-ROAD.

Camden to South Amboy

Pensaukin Creek.	7.00	
Rankocus River.	5.00	12.00
Burlington.....	6.00	18.00
Craft's Creek ...	6.00	24.00
White Hill	2.00	26.00
Bordentown	1.50	27.50
Crosswick's creek	2.50	30.00
Centreville	7.00	37.00
Hightstown.....	4.00	41.00
Spotswood	11.00	52.00
Herbertsville ...	2.50	54.50
South Amboy ...	6.50	61.00

PHILADELPHIA AND TRENTON RAIL-ROAD.

Philadelphia to Morrisville.

Frankford	4.00	
Pennepack Creek	4.50	8.50
Pequasin Creek .	1.50	10.00
Dunksville	3.00	13.00
Harlington	1.00	14.00
Bristol	3.50	17.50
Tullytown.....	3.50	21.00
Tyburn	2.50	23.50
Morrisville	2.75	26.25

From Bristol to Mauch Chunk, via Delaware Division Penn. Canal and Lehigh Canal.

Morrisville	9.75	
Yardleyville	4.50	14.25
Brownsburg	3.50	17.75
Taylorsville	3.50	21.25
New Hope.....	4.00	25.25
Lumberville	7.00	32.25
Point Pleasant ..	1.50	33.75
Smithville.....	3.00	36.75
Erwinna	4.00	40.75
Monroe	8.50	49.25
Williamsport....	9.00	58.25
Easton	1.50	59.75
Bethlehem	12.00	71.75
Allentown Bridge	5.00	76.75
Beil's Creek	5.50	82.25
Berlin.....	5.50	87.75

Craig's Creek ...	8.00	95.75
Bowman	3.00	98.75
Lehighton	4.00	102.75
Falls of Lehigh .	1.00	103.75
Mauch Chunk ..	2.75	106.50

Philadelphia to Port Carbon, via Schuylkill Navigation.

Viaduct Phila. and Col. Rail-Road.	2.00	
Canal at Falls...	2.00	4.00
Manayunk.....	3.00	7.00
Morristown.....	9.00	16.00
Perkiomen Creek	8.50	24.50
Phœnixville	3.50	28.00
Pottstown	15.00	43.00
Unionville.....	3.00	46.00
Birdsboro'	6.00	52.00
Reading.....	12.00	64.00
Hamburg.....	23.00	87.00
Port Clinton	4.00	91.00
Schuylkill Haven	10.50	101.50
Mount Carbon ..	4.00	105.50
Pottsville.....	.50	106.00
Port Carbon	2.00	108.00

UNION CANAL.

Reading.....	4.00	
Bernville.....	15.50	19.50
Stouche's Town .	11.50	31.00
Myers' Town ...	4.00	35.00
Lebanon	9.00	44.00
Tunnel	3.00	47.00
Water Works ...	3.00	50.00
Swatara aqueduct	4.50	54.50
Beaver Creek...	18.00	72.50
Middletown	9.50	82.00

Philadelphia to Pittsburg, via Philad. and Col. Rail-Road, Main Division Penn. Canal, Alleghany Portage Rail-Road, and Western Division Penn. Canal.

Philadelphia and Columbia Rail-Road, Viaduct over the Schuylkill River.....	3.00	
Buck Tavern ...	8.00	11.00
Spread Eagle ...	5.00	16.00
Paoli	4.50	20.50
Warren	1.50	22.00
Valley Creek ...	7.00	29.00
Downingtown...	3.00	32.00
Coatsville	8.00	40.00
Gap Tavern	11.50	51.50
Soudersburg	9.40	60.90
Lancaster	9.20	70.10
Mount Pleasant .	7.00	77.10
Columbia.....	4.50	81.60

MAIN DIVISION PENNSYLVANIA CANAL.

Marietta	3.00	84.60
Bainbridge	6.40	91.00
Falmouth	3.50	94.50
Middletown	4.25	98.75
Highspiretown ..	3.00	101.75
Harrisburg	6.25	108.00
Port Dauphin ...	7.50	115.50
Juniatta River ..	8.50	124.00
Newport	10.00	134.00
Lower Aqueduct	6.00	140.00
Thompsonstown.	5.00	145.00
Mexico	7.00	152.00
Mifflintown.....	4.00	156.00
Lewistown	14.00	170.00
Waynesburg	14.00	184.00
Aughwick Falls .	12.00	196.00
Huntingdon.....	17.00	213.00
Petersburg	7.00	220.00
Alexandria	7.00	227.00
Williamsburg ...	13.00	240.00
Frankstown.....	10.33	250.33
Hollidaysburg...	3.00	253.33

ALLEGHANY PORTAGE RAIL-ROAD.

Inclined Plane No. 10	3.67	257.00
Do. do. No. 6....	6.50	263.50
Mountain Bridge.	9.00	272.50
Ebensburg Br...	3.00	275.50
Staple Bend Tunnel	10.00	285.50
Johnstown.....	4.52	290.02

WESTERN DIVISION PENNSYLVANIA CANAL.

Laurel Hill	6.75	296.77
Lockport	9.23	306.00
Chestnut Hill ...	5.00	311.00

Blairsville	8.00	319.00
Saltzburg	16.00	335.00
Salt Works	7.00	342.00
Warrenton	5.00	347.00
Leechburg	10.00	357.00
Aqueduct over Alleghany River	3.00	360.00
Freeport	2.00	362.00
Logan's Ferry	13.00	375.00
Pine Creek	12.00	387.00
Pittsburg	7.02	394.02

OHIO AND ERIE CANAL.

Cleveland to Portsmouth.

Mill Creek Aqueduct	9.00	
Tinker's Creek	4.00	13.00
Boston	8.00	21.00
Peninsula	3.00	24.00
Old Portage	8.00	32.00
Newberry Coal House	3.00	35.00
Akron	3.00	38.00
New Portage	6.00	44.00
Clinton	8.00	52.00
Fulton	4.00	56.00
Massillon	9.00	65.00
Bethlehem	6.00	71.00
Bolivar	9.00	80.00
Zoar	3.00	83.00
Jennings' Bridge	8.00	91.00
Dover	2.00	93.00
Lockport	4.00	97.00
Newcastle	2.00	99.00
Trenton	4.00	103.00
Babillard	5.00	108.00
Salisbury	4.00	112.00
New-Comer's t'n.	6.00	118.00
Evansburg	4.00	122.00
Newport	10.00	132.00
Roscoe	3.00	135.00
Stillwell's Locks.	10.00	145.00
Webbsport	4.00	149.00
Frazeesburg	6.00	155.00
Nashport	6.00	161.00
Licking	9.00	170.00
Newark	6.00	176.00
Hebron	9.00	185.00
Millersport	6.00	191.00
Baltimore	5.00	196.00
Havensport	6.00	202.00
Carroll	2.00	204.00
Waterloo	5.00	209.00
Lockburn	12.00	221.00
Bloomfield	7.00	228.00
Circleville	8.00	236.00
Deer Creek	14.00	250.00
Chillicothe	9.00	259.00
Waverley	20.00	279.00
Jasper	6.00	285.00
Portsmouth	25.00	310.00

MIAMI CANAL.

Cincinnati to Dayton.

Reading	12.00	
Sharon	4.00	16.00
Hamilton	12.00	28.00
Middletown	14.00	42.00
Franklin	7.00	49.00
Miamisburg	6.00	55.00
Alexanderville	3.00	58.00
Dayton	8.00	66.00

THE END.

Advertisements in this book courtesy of Julius W. Murphy, of Pittsburgh, "Fort Hunter Canal Town, USA," and Canal Society of Ohio.

NATIONAL HOTEL.

WILLIAM J. STEEL,

LATE of Philadelphia, has taken the above Hotel formerly occupied by Samuel W. Stuart in

Lewistown, Mifflin County Penn'a.

This establishment has lately undergone a thorough repair. It is pleasantly & conveniently situated for the business part of the town, and to the Canal. He is provided with every convenience for the accommodation of his customers, and hopes by a strict attention to business, to receive a liberal share of public favour.

Persons travelling, or who may wish to remain in the place, can be accommodated with seperate rooms during their stay.

A number of boarders, can also be accomdated.

The Stabling is large and convenient and shall at all time, be attended with careful hostlers.

W. J. S

Lewistown June 11th, 1837.

N. B. The Pioneer line of Boats, passing daily between Pittsburg and Philadelphia and the line of Stages to Erie, by way of Bellefonte which leaves this every day, except sunday, keep their office at this house for receiving passengers.

W. J. S.

ROCHESTER
AND
ALBANY.

Red Bird Line of Packets,
In connection with Rail Road from Niagara Falls to Lockport.

1843. 1843.

12 *hours ahead of the Lake Ontario Route!*

The Cars leave the Falls every day at 2 o'clock, P. M. for Lockport, where passengers will take one of the following new

Packet Boats 100 Feet Long.

THE EMPIRE!

C romley,

TH ESTER

arren,

and arrive g at 6 o'clock, and can take the 8 Boats for Syracuse and Albany, an light.

☞ Passe gh a delightful country, and will have an opportunity of viewing Queenston Heights, Brock's Monument the Tuscarora Indian Village, the combined Locks at Lockport, 3 hours Rochester, and pass through the delightful country from Rochester to Utic by daylight.

N. B.---These two new Packets are 100 feet long, and are buil on an entire new plan, with

Ladies' & Gentlemen's Saloons,

and with Ventilators in the decks, and for room and accommoda tions for sleeping they surpass any thing ever put on the Canal.

For Passage apply at Railroad and Packet Office, Niagara Falls.

September. 1843.

T. CLARK,
J. J. STATIA, } Agents

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